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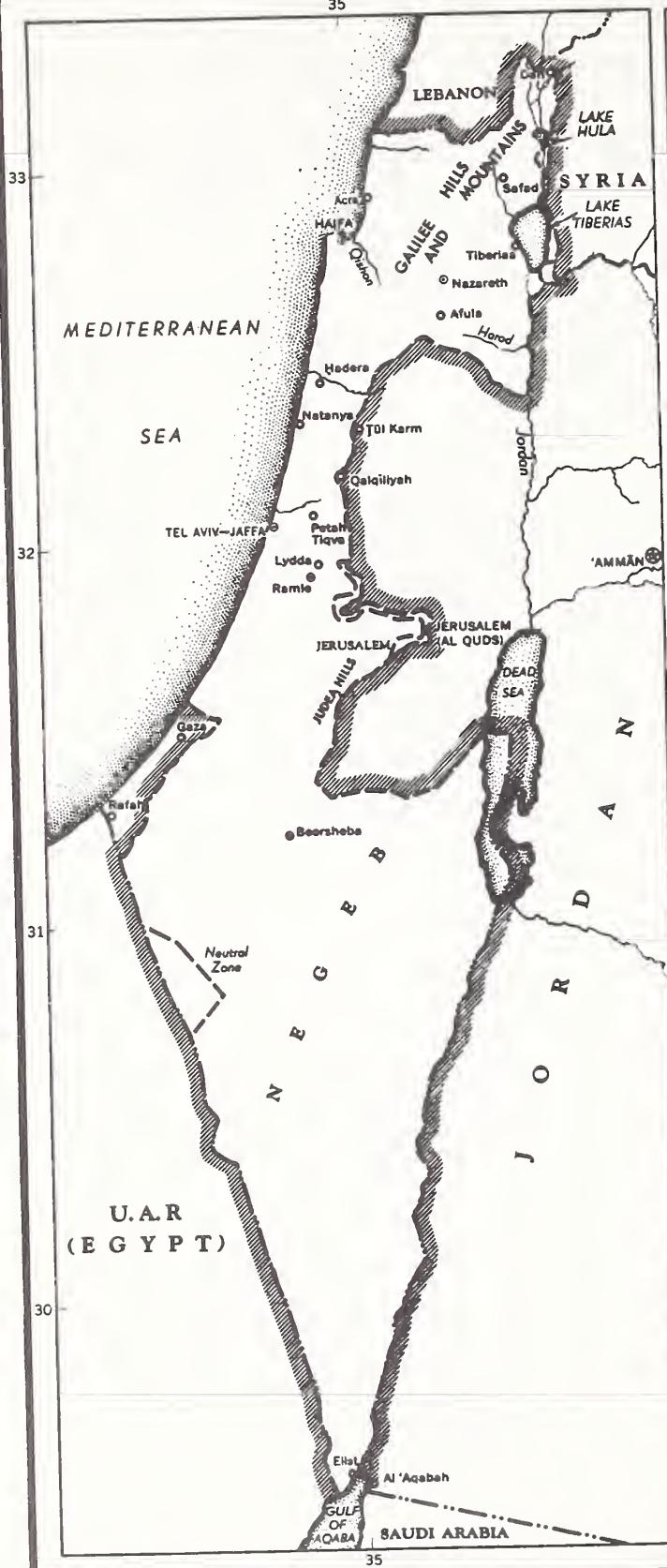
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ISRAEL

**SUPPLY AND DEMAND
PROJECTIONS FOR
AGRICULTURAL
COMMODITIES
TO 1975**

ERS-Foreign-137

U.S. DEPARTMENT OF AGRICULTURE
Economic Research Service



ISRAEL

ORIENTATION MAP

— International boundary
- - - Armistice line

0 10 20 30 40
Statute Miles
0 10 20 30 40
Kilometers

PREFACE

This report summarizes the major findings of an independently published research study, and adds conclusions and implications for U. S. agriculture, with revised import-export projections for Israel.

The Falk Institute for Economic Research in Israel prepared Long-Term Projections of Supply and Demand for Agricultural Products in Israel--General View and Summary, by Yair Mundlak. For the most part, the 224-page study was completed by 1961, but for technical reasons was not published by the The Hebrew University Faculty of Agriculture, Jerusalem, until 1964. This research study was prepared under contract for the Economic Research Service and the Foreign Agricultural Service, U.S. Department of Agriculture. The study, referred to hereafter as the "Falk report," summarizes projections of the import demand for selected agricultural products in 1965 and 1975, based on accepted techniques of methodology and generally realistic assumptions. It makes an important contribution towards USDA's worldwide program of developing long-range projections of supply and demand for farm commodities.

When this summary report was prepared in the U.S. Department of Agriculture, enough current information on trends in Israeli agriculture was available to revise the 1965 projections, and to indicate probable--though not quantitative--adjustments for 1975.

This report was prepared under the general supervision of the Director, Foreign Regional Analysis Division, Economic Research Service, U. S. Department of Agriculture, Washington, D. C. 20250.

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August 1965

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SUMMARY

Increases in future U.S. agricultural exports to Israel seem probable for such commodities as wheat, feed grains, oilseeds, and tobacco. U.S. exports of dairy products, beef, cotton, and rice may decrease, because of Israeli agreements with the European Economic Community, its increasing trade with the developing countries of Asia and Africa, and changing policies of its Government.

Israel is buying more and more of its U.S. agricultural imports with dollars, instead of paying with counterpart funds. Increased dollar purchases are expected for U.S. grain, soybeans, cotton, rice, tobacco, and meat.

The major findings of the Falk report (cited in the preface) are summarized in this report, with implications of the projections on U.S. agricultural exports to Israel. Revised import projections, based on more recent information than was available to the author of the Falk report, are included.

In the Falk report, specific import projections are made for eight commodities: Wheat; feed grains; dairy products; oilseeds; cotton; tobacco; meat, other than poultry; and rice. Because of changes in production or a shift in demand, the 1965 import projections for feed grains, tobacco, cotton, dairy products, and meat are not expected to be met. Projections for 1965 for these commodities are modified in this summary report to what appears to be more probable levels. For the 1975 projections, which do not appear feasible in view of the modified 1965 projections, probable adjustments--but not quantitative levels--are indicated.

Israel has been a large market for U.S. agricultural products, although the population was but 2.4 million in 1963. U.S. agricultural exports to Israel in 1963 amounted to \$65.8 million. Israeli imports of the eight selected commodities and their products during 1963 totaled \$57.6 million, or 88 percent of \$65.8 million.

Israel's main agricultural import from the United States is wheat, and Israel is expected to purchase at least 210,000 tons of wheat from the United States in 1965. (All tonnages are in metric tons.) The per capita consumption of wheat products in Israel has been declining but future increases in demand are expected to occur because of population increases. The United States is projected to supply Israel with 230,000 tons of wheat in 1975, or 75 percent of its total needs.

The Falk report projects 1965 feed-grain import needs at 289,000 tons, but it appears at least 460,000 tons will be imported. The United States is expected to supply Israel with about 375,000 tons of feed grains in 1965 (20,000 tons of barley; 190,000 tons of sorghum grain; and 165,000 tons of corn). The Falk report projects 1975 feed grain import needs at 408,000 tons. Actual imports, however, are expected to be at least 25 percent greater than this figure. The United States is projected to supply about 30 percent of Israel's barley needs and 80 percent of its corn and sorghum needs in 1975.

Dairy products (butter, dry milk, and hard cheese) equivalent to about 20-million liters of fluid milk, will be imported in 1965. No breakdown by products is made. The United States is expected to supply Israel with most of its dry-milk needs, but will face strong competition for the butter-and-cheese market. No import projections are made for 1975 as the level of milk production in Israel is largely dependent upon government policy.

The Falk report projects the imports of meat other than poultry--primarily beef-- at 8,700 tons in 1965 and 20,400 tons in 1975. Because of a sudden shift in demand, however, red-meat imports are expected to approach 25,000 tons in 1965. The United States is projected to supply Israel with about 6,000 tons of meat in 1965; Israel's 1975 import needs are expected to be about double the level projected in the Falk report--20,400 tons--and the United States should obtain about 10 percent of this market.

The Falk report projects that Israel will be an exporter of raw cotton in 1965 and 1975. But because of rapid expansion of spinning capacity, Israel will be an importer of raw cotton and an exporter of cotton fabrics in 1965. It is anticipated that Israel will import about 11,000 tons of cotton in 1965 and that the United States will supply about 5,000 tons of this. The future demand for raw cotton depends on Israel's success in finding markets for its manufactured cotton and textiles.

Israel's oilseed imports have consisted almost entirely of U.S. soybeans. It is projected that Israel will obtain about 220,000 tons of soybeans from the United States in 1965 and 240,000 tons in 1975. The market potential for soybeans is determined less by the demand for soybean oil than by the quantity of oilcake which can be consumed by local livestock industries.

U.S. tobacco exports to Israel are projected to increase from 300 tons in 1965 to 600 tons in 1975. The level of local production in Israel has limited effect on imports from the United States, as nearly all of Israel's production is oriental tobacco.

The United States is projected to supply Israel with 7,500 tons of rice in 1965, but only 4,500 tons in 1975. Because of Israel's desire to increase trade with Asia, more Asian rice is expected to be imported in the future.

Israel's agricultural exports consist primarily of citrus and eggs; neither product competes extensively with those of the United States markets.

ISRAEL: PROJECTIONS OF SUPPLY AND DEMAND
FOR AGRICULTURAL PRODUCTS TO 1975

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INTRODUCTION

The Falk report summarized and analyzed the findings and methodology of 13 separate studies of specific branches of Israeli agriculture. The separate studies were conducted by different researchers who used varying assumptions and varying mathematical treatment of available data. Some researchers used highly sophisticated econometric techniques in arriving at their projections, while other researchers largely extrapolated trends.

The statistical calculations in the published study--and the individual studies in particular--were, for the most part, completed by 1961. For various technical reasons, publication was delayed until 1964. Useful draft copies of the individual studies and of the published report were available at an earlier date.

In interpreting the study, it must be recognized that long-term economic projections are necessarily subject to several limitations. First, long-term projections are presentations of what appear plausible at the time the projections are made. Basic underlying assumptions may be altered by technological developments or policy changes. Second, assumptions about consumer behavior, changes in tastes, and shifts in preference patterns may be deceptive in a society undergoing change. Since Israel became a State in 1948, it has made astonishing progress in spite of limited natural resources. Third, weather and pest damages cannot be foreseen, nor can their effects be projected quantitatively; they may significantly affect production levels for sustained periods. Finally, there are often not enough statistical data available to analyze various economic relationships. Also, the reliability of the available data is not always as high as may be preferred.

In view of recent data, some of the limitations mentioned above become readily apparent. In the Falk report, specific import projections are made for eight commodities: Wheat, feed grains, dairy products, oilseeds, cotton, tobacco, meat (other than poultry), and rice. Because of changes in production or a shift in demand, 1965 imports of feed grains, tobacco, cotton, dairy products, and meat are not expected to equal the amounts projected. With the aid of more current data, the author modified the 1965 projections to what appear to be more probable levels. These revisions of the Israeli projections for 1965 are quite substantial for some products. Lack of data and time precluded the detailed analysis which would have been required to provide a sound basis for quantitatively modifying the corresponding 1975 projections. However, for the 1975 Falk report projections which do not appear feasible in view of the modified 1965 projections, probable adjustments--but not quantitative levels--are indicated.

The projections made in the Falk report and their modifications are noted in the discussion on each commodity. The values projected for 1965 can be thought of as averages for 1964-66, since no account can be taken of the random disturbances which vary from year to year. Thus, the final results, corresponding to the 1965 projections, will not be known until late in 1967, when the returns for 1966 become available.

Projections for 1965 at this late date are of slight value, but are presented to show the magnitude of the changes that the author of the Falk report expected to occur in specific branches of agriculture, from 1960 to 1965 and 1975. This USDA report shows what is more likely to occur because of recent shifts in production or consumption trends.

The Falk report contains limited import and export data through 1960. These data have been updated as far as available statistics permitted at the time this report was prepared. Most of the tables in this USDA report contain data from the Statistical Abstracts of Israel and the Statistical Bulletins of Israel; both series are published by the Central Bureau of Statistics (Israel). Israel has not published the sources of her imports in detail since 1958. U.S. statistics, showing agricultural exports to Israel, have been used to arrive at the U.S. share of Israel's total imports of a commodity.

U.S. and Israeli figures are not directly comparable. U.S. trade data are for January 1 through December 31 (calendar year), while similar data for Israel are for October 1 through September 30 (Hebrew calendar year). For the purpose of this report, data for a period such as October 1, 1962 to September 30, 1963, are compared to U.S. data for 1963.

All tonnages in this report are metric.

IMPLICATIONS FOR U.S. AGRICULTURAL TRADE

After the creation of the State of Israel on May 14, 1948, a sharp transformation took place in Israeli agriculture. In the first 12 years of statehood, its index of farm production increased from the 1948-49 base (100) to 489. But agriculture has rarely contributed more than about 12 percent of the national income or employed more than an average of 17 percent of the labor force. Most presently cultivable land is fully used. Neither unused national resources, opportunities for employment, nor marketing possibilities now indicate the potential for an increase in the agricultural sector comparable to that of the 1948/49-1958/59 period. Hence, Israel's need for agricultural imports will increase in the future. In 1963, Israel's agricultural imports amounted to \$142.2 million. The eight imported agricultural products specifically dealt with in this report amounted to 61 percent of this total.

The United States has been Israel's primary source of agricultural imports. U.S. agricultural exports to Israel in 1963 amounted to \$65.8 million. U.S. exports to Israel of the eight selected commodities and their products during 1963 totaled \$57.6 million, or 88 percent of the total.

The United States' main agricultural export to Israel is wheat, and Israel is expected to purchase about 80 percent of its wheat needs from the United States in 1965, or 210,000 tons (table 1). The per capita consumption of wheat products in Israel has been declining, but future increases in demand are expected to occur because of population increases. The United States is projected to supply Israel with 230,000 tons of wheat in 1975, or 75 percent of its total needs.

The United States has been Israel's only constant and reliable source of feed grains. During the period 1959-62, the United States supplied Israel with 30 percent of its barley needs, and 95 percent of its corn and sorghum needs.

Table 1.--Israel: Projections of demand, domestic production, and imports of selected agricultural commodities; Israeli projections for 1965 and 1975, and Economic Research Service revisions

Commodity	Total demand				Domestic production			
	1965	1965 revised	1975	1975 revised	1965	1965 revised	1975	1975 revised
	<u>1,000 metric tons</u>							
Wheat.....	345	--	387	--	81	--	81	--
Feed grains.....	421	592	540	--	132	--	132	--
Meat, other than :								
poultry.....	32.9	49.2	52.9	--	24.2	--	32.5	--
Oilseeds.....	<u>1/</u> 232-487	<u>2/</u> 275	<u>1/</u> 286-487	<u>2/</u> 325	39	25	58	40
Cotton.....	15.4	23.0	24.1	--	22.8	<u>3/</u> 15.6	33	--
Tobacco, unmfd....	3	--	4	--	2.1	1.7	2	--
Rice.....	14.7	--	18	--	0	--	0	--
	<u>Million liters</u>							
Dairy products...	415	--	581	--	415	395	581	--
	<u>1,000 metric tons</u>							
	Total imports				Imports from U. S.			
Wheat.....	264	--	306	--	210	--	230	--
Feed grains.....	289	460	408	--	375	---	---	<u>5/</u>
Meat, other than :								
poultry.....	8.7	25	20.4	--	6	--	--	<u>5/</u>
Oilseeds.....	<u>1/</u> 193-448	<u>2/</u> 250	<u>1/</u> 228-429	<u>2/</u> 285	220	--	240	--
Cotton.....	-7.4	11	-8.9	--	5	--	--	<u>5/</u>
Tobacco, unmfd....	0.9	1.3	2	--	0.3	--	0.6	--
Rice.....	14.7	--	18	--	7.5	--	4.5	--
	<u>Million liters</u>							
Dairy products...	0	<u>4/</u> 20	0	--	--	<u>5/</u>	--	<u>5/</u>

1/ Falk report makes a high and a low projection.

2/ Selected level.

3/ Includes 3,600 tons of low-grade cotton for exports.

4/ Dairy products equivalent to 20 million liters of fluid milk.
One liter = 1.0567 quarts.

5/ Quantitative projection not made.

Source: Adopted from Table 3, Falk report (cited page 1).

The Falk report projects 1965 feed grain import needs at 289,000 tons, but it appears that about 460,000 tons will be imported. The United States is expected to supply Israel with about 375,000 tons of feed grain in 1965 (20,000 tons of barley; 165,000 tons of corn; and 190,000 tons of sorghum grain). The Falk report projects 1975 feed-grain import needs at 408,000 tons. Actual imports, however, are expected to be at least 25 percent greater than this figure. The United States is projected to supply about 30 percent of Israel's barley needs and 80 percent of her corn and sorghum needs in 1975.

The per capita production of milk increased 42 percent in 1954-60. The study projects milk production to be adequate to meet domestic demand in 1965 and 1975. But, in early 1964, the Government of Israel approved plans for retarding milk production. Under the plans, dairy products (butter, dry milk, and hard cheese) equivalent to about 20-million liters of fluid milk will be imported in 1965. No breakdown by products is made. The United States is expected to supply Israel with most of her dry-milk needs, but will face strong competition from the Netherlands, Denmark, and Australia for the butter-and-cheese market. No import projections are made for 1975, but there will be a market for dairy products as long as the present Government policy continues.

The Falk report projects the imports of meat other than poultry--primarily beef-- at 8,700 tons in 1965 and 20,400 tons in 1975. Because of a sudden shift in demand, red-meat imports are expected to approach 25,000 tons in 1965. The United States is projected to supply Israel with about 25 percent of its import needs for such meats in 1965, or 6,000 tons. Israel's 1975 import needs are expected to be about double the level projected in the Falk report--20,400 tons--and the United States should obtain about 10 percent of this market. Poultry meat is considered separately from other meats (beef, mutton, goat, and pork). Poultry meat, whose production greatly exceeds the production of other meats, is exported while red meats are imported. The major red meat is beef. Future expansion of the Israeli beef herd is limited by the availability of land for forage production and grazing.

The study projects that Israel will be an exporter of raw cotton in 1965 and 1975. The current consumption of cotton in Israel is about 12,000 tons, which is less than domestic production. But because of rapid expansion in spinning capacity, Israel will be an importer of raw cotton and an exporter of cotton fabrics in 1965. If past trends continue, Israel will import about 11,000 tons of cotton in 1965. The United States will supply about 5,000 tons of this. The future demand for raw cotton depends on Israel's success in finding markets for its manufactured cotton and textiles.

Israel produces but a small portion of its oilseed needs and its imports of this commodity have consisted almost entirely of U.S. soybeans. It is projected that Israel will obtain about 220,000 tons of soybeans from the United States in 1965 and 240,000 tons in 1975. The market potential for soybeans is determined less by the demand for soybean oil than by the quantity of oilcake which can be consumed by livestock.

United States tobacco exports to Israel are projected to increase from 300 tons in 1965 to 600 tons in 1975. The level of local production in Israel has limited effects on the volume of imports from the United States, as Israel's production is nearly all oriental varieties of tobacco. The demand for cigarettes made from American Virginia-type tobacco is strong, but a high excise tax makes such cigarettes expensive.

The United States is projected to supply Israel with 7,500 tons of rice in 1965, but only 4,500 tons in 1975. Israel imports all its rice needs, and in recent years, the United States has supplied approximately half of this amount. But, because of Israel's desire to increase trade with Asia, more Asian rice is expected to be bought by Israel in the future.

PROJECTIONS OF DEMAND

Population

Israel's population increased from 1.05 million in 1949 to 2.4 million in 1963. Mass immigration largely accounts for this sharp increase. The population density in 1963 was about 325 persons per square mile for the country as a whole, but mainly concentrated in the northern third of the country. Rural population, including Israelis in rural settlements and workers in fisheries and forestry, is 21 percent of the total. Israel is 90-percent literate, the highest rate of any country in the Middle East. Nearly 90 percent of the population is Hebrew, of which two-thirds are foreign-born. The remainder of the population is mainly Arab.

It is projected that immigration will continue at an average rate of 40,000 people per year through 1965, and will average 20,000 people per year from 1966 through 1975. The estimate of natural increase is made separately for Jews and non-Jews because of the large difference in the birth and death rates of the two. The non-Jewish population of 1965 is projected by assuming the 1960 population will increase at a rate of 4 percent per year. An average rate of 1.8 percent is assumed for the Jewish population. Thus, the population projection for 1965 is 2,528,000.

Assuming (1) that the population (only Jewish) in 1965 will be about 2,240,000 and the natural increase from 1965 to 1975 in this group will be at a rate of 2-percent per annum, (2) that the growth rate of the non-Jewish population will gradually decline and average 3.5 percent annually, and (3) that the net immigration will be 20,000 per year, we arrive at a 1975 population figure of 3,350,000.

Per Capita Income

Per capita income is dependent upon the level of gross national product (GNP). During 1950-60, Israel's GNP increased at an annual rate of 10.6 percent--a rate which was among the highest in the world. This rapid pace of economic growth was made possible by a continuous influx of aid from abroad, including donations from world Jewry, German reparations, and imports from the United States under Food for Peace programs. This supplied the means for the absorption of the mass immigration during the first years of statehood. Capital imports in the later years, after the rate of immigration had slowed down, supplied the funds needed for the large-scale investments which brought about the complete economic integration of the immigrants and the resulting rapid economic development. These funds helped pay for imports costing about double the value of exports (table 2).

The GNP projections in the Falk report are based on a number of facets of the economy, including employed labor force, output per worker, net domestic product per worker, investment, and balance of payments. It is projected that the GNP will increase at an average annual rate of around 8 percent from 1959 to 1965. Per capita disposable income for 1965 is therefore projected at \$1,145.

For the period 1965-75 a rate of growth in GNP of around 8 percent is considered an optimistic upper limit. A more reasonable assumption is an average rate of growth of around 6.5 percent. The per capita disposable income by 1975 is projected at \$1,450.

Table 2.--Israel: Balance of trade, 1956-63 1/

Item	1956	1957	1958	1959	1960	1961	1962	1963
:----- <u>1,000 dollars</u> -----:								
Imports:								
Agricultural.....:112,080 75,469 95,805 101,873 101,370 96,972 127,441 142,158								
Nonagricultural....:254,806 330,979 337,450 330,226 405,329 489,376 500,684 531,841								
Total.....:366,886 406,448 433,255 432,099 506,699 586,348 628,125 673,999								
Exports:								
Agricultural.....: 43,646 54,353 56,842 58,063 63,153 62,603 68,378 89,160								
Nonagricultural....: 61,156 82,984 84,696 122,988 155,185 182,677 210,819 260,691								
Total.....:104,802 137,337 141,538 181,051 218,338 245,280 279,197 349,851								
Excess of imports over exports.....:262,084 269,111 291,717 251,048 288,361 341,068 348,928 324,148								

1/ Years ending September 30.

Source: Central Bureau of Statistics, Israel.

Food Consumption

Two sources of data were used in determining the per capita consumption of a particular product: (1) the findings of family-budget surveys conducted in the years 1956/57 and 1959/60, and (2) time series. The first source was used for deriving estimates of the effect of changes in per capita income on per capita consumption, whereas the second source was used for deriving estimates of the effects of the other variables, such as prices, trends, and consumption patterns. The empirical findings of the demand analyses are summarized in table 3.

The partial effect of income on consumption--other variables remaining unchanged--is measured by income elasticity, which measures the percentage change in consumption associated with a 1-percent change in income. As shown in table 3, the effect of income on consumption varies among commodities. Low--and even negative--income elasticities were obtained for wheat products (especially bread) and for edible oils. This means that when income rises, we can expect a decrease in the consumption of products whose income elasticity is negative, or no change in the consumption of products whose income elasticity is zero. The income elasticities of meat are the highest among animal products, but there are variations between items: the elasticity of poultry meat, whose consumption is relatively high, is around 0.3, whereas that of fresh beef, whose consumption is relatively low, is around 1.3. A rather high elasticity of 0.7 is also derived for fresh fruit. But here again, there are differences between varieties.

Income elasticity for all food is in the range of 0.5 to 0.6; an increase in income is thus likely to have a significant effect on food consumption.

Table 3.--Israel: Elasticities of demand, 2 statistical methods

Commodity	Family expenditure surveys (Income Elasticity)				Time series		
	1956/57		1959/60		Income	Price	Period
	Quantity	Expenditure	Quantity	Expenditure	elasticity	elasticity	
	:	:	:	:	:	:	
Total food.....	--	0.52	--	--	0.64	-0.62	1952-61
Flour & cereals:							
Total.....	--	-0.04	--	--	--	--	--
Bread.....	--	-0.22	--	-0.26	--	--	--
Others.....	--	0.28	--	0.31	--	--	--
Meat:							
Total.....	0.48	0.78	--	--	--	--	--
All beef.....	0.59	0.92	--	1.28	--	--	--
Fresh beef.....	1.27	1.42	--	1.30	--	--	--
Poultry.....	0.30	0.44	0.17	0.38	0.30	-3.26	1956-60
Milk & milk prod.:							
Total.....	--	0.53	--	0.59	--	--	--
Drinking milk..	--	0.34	--	0.40	-0.02	-0.32	1954-59
Other products..	--	0.48	--	0.86	0.27	0.03	1954-60
Eggs.....	0.66	0.75	0.33	0.42	0.66	-0.80	1956-60
Edible oils:							
Total.....	--	--	--	-0.11	--	--	--
Margarine.....	0.09	0.13	--	-0.12	--	--	--
Other oils.....	--	-0.06	--	-0.36	--	--	--
Fresh fruit:							
Total.....	--	0.71	--	0.77	--	--	--
Citrus.....	0.72	0.81	--	0.54	--	--	--
Summer fruit...	--	--	--	--	0.91	-1.8	1954-59
Fresh vegetables.:	-0.07	0.17	--	0.26	-0.08	1.1	1954-59
Cotton.....	--	--	--	--	0.69	-0.95	1953-58
Cigarettes 1/:							
Group 1.....	--	--	--	--	-4.89	-0.49)	
Group 2.....	--	--	--	--	-2.00	-0.05)	
Group 3.....	--	--	--	--	0.36	-0.87)	
Group 4.....	--	--	--	--	2.38	-5.20)	1952-60

1/ Grouped by quality; group 1 lowest, group 4 highest.

Source: Adapted from table 37, Falk report (cited, p. i).

Table 4.--Israel: Domestic consumption of selected agricultural products in 1960 and projections for 1965 and 1975
(Underscored figures are breakdowns and do not add to totals)

Commodity	Per capita consumption 1/		Percentage of total consumption (All food = 100)	Projected total consumption	
	Actual	Projected		Quantity 2/	Index, 1960 = 100
Bread and cereals.....	138.0	119.6	98.8	11.9	302.3
Meat.....	27.7	33.5	38.5	22.1	331.0
Other than poultry.....	10.7	13.0	15.8	12.4	84.7
Poultry.....	17.0	20.5	22.7	9.7	129.1
Fish.....	10.4	10.9	11.3	4.1	52.9
Milk and milk products.....	145.8	164.2	173.4	11.3	51.8
Eggs.....	345	385	401	6.5	76.2
Oils.....	16.0	15.7	14.6	3.9	37.9
Fresh fruit.....	123.0	157.9	170.6	14.4	415.0
Fresh vegetables and potatoes.....	136.7	143.0	143.0	9.4	580.9
Other food.....				16.4	973
All food.....				100.0	1,343
Cigarettes.....	1,249	1,200	1,200	3.0	133
Cotton.....	3/ 4.8	6.1	7.2	15.4	184
				24.1	117
				4/152	144
				4/237	219
					219

1/ In kilograms, except for milk (in liters), and eggs and cigarettes (in units).

2/ In 1,000 metric tons, except for milk (in millions of liters), and eggs (in millions).

The figures for cigarettes include tobacco.

3/ 1958.

4/ 1958 = 100.

Source: Adapted from table 1. Falk report (cited, p. i.).

The partial effect of the price of the product on its consumption is represented by the price elasticity. In general, the estimated price elasticities are negative, with a decrease in price being associated with an increase in consumption. The price elasticity for all food as a whole is about -0.6. This means that a decline in the price of food will lead to an increase in consumption. However, the rate of increase in the consumption of each product that will accompany a general price decline will not be according to the elasticities quoted, since consumption depends not only on the price of a given product but also on the prices of related products. In order to take the latter into account, cross-elasticities were computed. Even after prices of related commodities are considered, in most products an increase in consumption is expected to accompany a decrease in price. The final per capita consumption projections are presented in table 4.

Evaluation of Demand Projections

The 1965--and 1975--consumption projections were made in 1960-61. It may seem futile to work out projections for a 5 or 15-year period when even a short-term forecast is uncertain. But short-term and long-term forecasts are quite different. Short-term forecasts depend primarily on the market situation (age levels, weather conditions, political situation, etc.). Long-term forecasts appraise structural changes in consumption and disregard short-term fluctuations. A long-term demand forecast, or projection, is not made to answer the question of what will be the exact amount of consumption between, say, January 1, 1975, and December 31, 1975, but to determine what will be the consumption trend between 1960 and 1975, disregarding the influence of special conditions on the market in 1975.

Appraisal of the 1965 Falk report demand projections, in view of 1963/64 data, indicate there has been an unanticipated shift in the demand for meat other than poultry. Demand is likely to be about 16,000 tons greater than projected. The Falk report demand projection for feed grains is much too low and is therefore modified upward 170,000 tons. The demand projection for raw cotton is too low; Israel is exporting cotton fabrics at a higher level than anticipated in the study. The 1965 projections for rice, unmanufactured tobacco, oilseeds, dairy products, and wheat appear feasible. The projection for wheat seems to be the weakest, as it may be somewhat low.

While no quantitative modifications have been made in the 1975 projections, the demand for meat other than poultry, feed grains, and cotton will very likely be much higher than projected in the Falk report.

PROJECTIONS OF SUPPLY

The purpose of the supply analysis is to determine what quantities of agricultural commodities will be produced at various prices. In general, the quantity produced at any given price is determined by the amount of scarce resources, such as water and land, by the level of productivity, and by the prices of purchased inputs (table 5 and 6).

The production projections, by value, are summarized in table 7. Domestic consumption will continue to be the main outlet for most agricultural commodities produced in Israel. Exports of various commodities will continue, but, in general, agricultural exports will not constitute a large share of total agricultural production.

In 1965, total agricultural production is expected to be about 48 percent above 1960. This amounts to expansion at an average annual rate of about 8 percent as compared with 14 percent in 1949-61. The lower rate of expansion is attributable to the limited opportunities of increasing the amount of water and land. This implies that further expansion in production would have to take place by increasing production of products which require extensive amounts of labor and capital. Such expansion will have to adjust to changes in demand for the products in question.

In 1951-61, cultivated land increased at an average annual rate of 2.2 percent, whereas water consumption in agriculture increased at an average annual rate of 9.0 percent. However, the rate of increase in these two factors was not steady; it was high in the early part of the period, and very low in recent years. This was associated with a lower rate of expansion of production in recent years. Thus, in 1956-61, production increased by 72 percent, compared with 107 percent in 1951-56. Of course, such an evaluation of past performance very much oversimplifies the process of expansion in production, and may be misleading as to the net contribution of land and water. It is only intended to point out that expansion in these two factors was associated with expansion of the scale of operation in agriculture as a whole. This, of course, was also associated with a considerable increase in labor and capital, which contributed significantly to the increased production.

Table 5.--Israel: Irrigated land and water inputs in agriculture, 1957-63 1/

Item	Unit	1957	1958	1959	1960	1961	1962	1963
Irrigated land...: 1,000								
	: dunams 2/:	1,100	1,185	1,235	1,305	1,360	1,415	1,477
Quantity of water: Millions:								
	: of cubic :							
	: meters :	830	1,000	990	1,060	1,025	1,139	<u>3/1,163</u>
Quantity of water:								
per dunam of	: Cubic :							
irrigated area...: meters :		755	844	805	815	734	805	787
Index.....: -- :		100	112	107	108	100	107	104
	:							

1/ Years ending September 30.

2/ 1 dunam = .2471 acres. 10 dunams = 1 hectare.

3/ Provisional estimate.

Source: Central Bureau of Statistics, Israel.

The projections in table 7 show a 50-percent increase in production in 1965-75. This amounts to an annual rate of growth of about 4.2 percent. This projection assumes a slight increase in water available to agriculture, and the slow development of agricultural exports other than citrus, and makes a conservative estimate of the rise in productivity. Some other assumptions were suggested and have been evaluated, and their implications for total agricultural production were examined. These alternative projections are discussed below.

Table 6.--Israel: Cultivated area, 1957 and 1963 1/

Item	Area cultivated in --			Change from 1957
	1957	1963	1963	
	1,000 dunams 2/	1,000 dunams	Percent	Percent
Unirrigated land:				
Field crops.....	2,359	2,144	54.0	- 9.1
Vegetables and potatoes.....	25	19	.5	-24.0
Fruit.....	233	227	5.7	- 2.6
Miscellaneous.....	103	104	2.6	0
Total.....	2,720	2,494	62.8	- 8.3
Irrigated land:				
Fruit.....	365	573	14.4	+57.0
Field crops.....	368	532	13.4	+44.6
Vegetables and potatoes.....	250	266	5.7	+ 6.4
Fish ponds.....	41	58	1.5	+41.5
Miscellaneous.....	76	88	2.2	+15.8
Total.....	1,100	1,477	37.2	+34.3
Total cultivation...:	3,820	3,971	100.0	+ 4.0

1/ Years ending September 30.

2/ 1 dunam = .2471 acre. 10 dunams = 1 hectare.

Source: Central Bureau of Statistics, Israel.

The direct implication of the fact that there would be no significant increase of land and water is that production could be increased further by (1) increasing the amount of labor and capital and (2) raising the productivity of resources.

The first possibility implies, in the main, expansion in production which requires relatively less land and water and relatively larger quantities of labor or capital. An extreme example is poultry production, which requires very little land and water, and which could be expanded by further application of labor and capital. However, it is in the shift to labor-and capital-intensive crops that limitations from the demand side are encountered. These products are mainly sold in the domestic market, where increasing supply results in declining prices, thus curbing further expansion. This has, in fact, occurred in recent years. The products whose projections were affected by this limitation are milk, eggs, poultry meat, vegetables, bananas, melons, and indirectly, beef 1/.

For field crops, such as small grains, sugar beets, and cotton, the availability of land and water largely determines the level of production, and the production estimates were based on the projected quantities of land and water not required for other purposes; thus, they also reflect the demand limitations on other products.

1/ Since most beef is obtained from the dairy herds, the demand limitations on milk production affect the level of beef production.

Table 7.--Israel: Value of production of agricultural commodities for 1960 and projections for 1965 and 1975

Commodity	Actual		Projected value	Projected increase		
	value	1960		1960 = 100	1965 = 100	
	Million dollars	1965		1965	1975	1975
Field crops.....	67.9	107.5	163.3	158	240	152
Vegetable and potatoes..	34.6	37.1	49.1	107	142	133
Citrus.....	63.2	85.9	186.3	136	295	217
Other fruit.....	39.9	86.4	123.8	216	310	143
Milk.....	46.2	62.3	87.2	135	189	140
Eggs.....	51.8	57.5	74.7	111	144	130
Meat.....	85.2	129.7	181.6	152	213	140
Poultry.....	41.5	62.7	92.8	151	224	148
Other.....	43.7	67.0	88.8	153	203	132
Fish.....	10.3	14.9	18.6	144	180	125
Other.....	17.8	36.1	44.4	203	249	123
All commodities.....	416.9	617.3	929.0	148	223	150

Source: Adapted from table 3, Falk report (cited, p. i.).

The foregoing discussion suggests that a shift of resources to labor and capital intensive crops would depend on the development of new outlets for these products. The major one seems to be the export market. At present, the major agricultural export is citrus. The Falk report suggests that the projected increase in citrus production would have only a small depressing effect on prices and that expansion within the range contemplated by the government could be justified.

In recent years, serious attempts have been made to increase production of vegetables, some fruits, and poultry products for export. Because exports would help the country's economy, more effort will be made to expand export production. If this occurs earlier than is assumed in the projections, the increased production would use land and inputs that were projected for field crops.

We turn now to consider productivity. In the period 1952-61, the annual rate of increase in production, which was not explained by the increase in inputs, was 5.3 to 5.7 percent. That means that the increase in productivity accounted for about 40 to 48 percent of the annual increase in total production.

We have already noted that there will be no substantial increase in land and water resources. It is also assumed that there will be only a slight increase in the labor force engaged in agricultural production. Thus, the principal increase in inputs would be of capital. It is further estimated that capital employed in agriculture will expand more slowly than in the past. All this implies that productivity will rise in the future. This is a rather general statement. For the purpose of projections, more specific assumptions had to be made on the different rates of growth for each commodity group and on the nature of the increases.

The estimates of individual commodities were based largely on past performance and assumed a rather moderate productivity increase. They call for performance at a lower level than that which has already been achieved by the better farmers. It is, however, realized that the adoption of improved practices requires time, and that past achievements do not suggest that more liberal assumptions should be used.

Yet, in view of the land and water limitation, it is possible that both farmers and the Israeli Government will devote greater efforts to raising productivity. It is now well recognized that the development of more productive practices and their dissemination among farmers can be accelerated by the allocation of more resources. It is very likely that additional resources diverted to research and extension work will bring a higher rate of return than, say, that achieved by resources engaged in developing marginal land or marginal water sources. If increasing efforts are made to speed up improvements in productivity, the results will not be apparent until after 1965.

With an increase in productivity and exports, and some development of additional water sources, it is possible that agricultural production in the period 1965-75 would increase at an annual rate of 5 to 6 percent, instead of the projected 4.2 percent. Should this happen it is likely that there would be only small changes in the production level of perishable products for domestic consumption; export products and field crops would account for most of the increase in agricultural production.

Evaluation of Supply Projections

The 1965 production projections made in the Falk report appear quite accurate. The cotton projection, however, is too high. As noted in table 1, the study projects cotton production at 22,800 tons; 15,600 tons appears to be a more reasonable figure. Cotton has not been as profitable a crop in relation to alternative crops as the study anticipated, and production has lagged accordingly. The projections for milk and eggs are slightly high, but this is because the Government has recently implemented policies to reduce the expansion of these products. The tobacco crop has been severely infected by the blue mold infection, and for this reason, the 1965 production projections for tobacco will not be met.

No quantitative modifications have been made in the 1975 supply projections.

AGRICULTURAL EXPORTS

Israel's agricultural exports consist primarily of citrus, eggs, peanuts, bananas, and poultry meat (table 8). Western Europe takes the greater part of Israel's exports of farm commodities. Arab hostility has prevented trade with neighboring countries other than Turkey and Cyprus. Although there has been increasing cultural exchange with non-Arabic Africa in the last few years, the market there for Israeli agricultural exports is small. Efforts to expand Central American markets for Israeli goods of agricultural derivations have been limited to promotion of sales of cotton and woolen yarns and manufactures.

U. S. imports of agricultural products from Israel exceeded \$1 million for the first time in 1963 (table 9). U.S. imports from Israel in 1963 were almost entirely wines, fruits, and fruit preparations.

Citrus

In 1963, citrus accounted for 84 percent of the total value of Israel's agricultural exports and 21 percent of the value of all goods exported. In the early years of the State, citrus was practically the sole agricultural export. Israel's citrus exports are divided, approximately, as follows: Oranges, 82 percent (67 percent Shamouti and 15 percent Valencia); grapefruit, 15 percent; and lemons, 3 percent.

Since the early 1950's, the citrus area in Israel has increased rapidly, more than doubling during the period 1954-60. This expanded acreage was accompanied by standardized and improved marketing methods, plus technological improvements, particularly in packaging and pest control.

Table 8---Israel: Value of exports of selected agricultural commodities, by quantity 1959-63 1/

Commodity	1959	1960	1961	1962	1963
<u>Metric tons</u>					
Citrus fruit.....	295,262	330,623	297,380	383,051	505,827
<u>1,000 dollars</u>					
Eggs:					
In shell 2/.....	284.5	397.6	358.6	310.0	115.9
Hatching 2/.....	.8	4.2	19.7	20.3	23.6
Frozen.....	19.0	352.0	2,970.0	701.0	289.0
Poultry meat.....	220	578	442	332	350
Peanuts:					
Shelled.....	--	177	1,275	1,069	349
Unshelled.....	4,776	6,191	5,556	5,345	3,806
Bananas.....	1,983	6,064	13,802	12,266	17,661
Citrus fruit.....	45,943	42,626	40,514	49,240	74,873
Eggs.....	6,714	10,693	12,162	8,645	5,208
Poultry meat.....	151	409	258	417	447
Peanuts.....	1,630	2,036	2,310	2,283	1,527
Bananas.....	287	705	1,685	1,528	2,228
Other.....	3,338	2,684	5,676	6,265	4,877
Total.....	58,063	63,153	62,603	68,378	89,160

1/ Years ending September 30.

2/ Millions.

Source: Central Bureau of Statistics, Israel.

Table 9.--United States: Value of all imports from Israel, calendar year 1957-63

Commodity	1957	1958	1959	1960	1961	1962	1963
<u>1,000 dollars</u>							
Dairy products.....	8	6	1	11	6	1	14
Citron or citron peel.....	108	90	113	66	158	30	114
Olive oil, edible....	269	10	102	1	<u>1/</u>	1	9
Vegetables and veg. preparations.....	--	0	0	67	68	54	71
Hides and skins.....	--	0	0	96	80	6	0
Oranges.....	--	--	--	--	--	55	302
Wines.....	91	152	132	186	279	358	459
Fruit preparations...	--	--	--	--	0	0	198
Animal hair.....	26	14	57	46	0	21	0
Tobacco.....	--	62	--	34	--	--	--
Cotton.....	--	0	0	54	39	51	17
Chocolate.....	53	74	90	110	--	--	170
All other.....	<u>129</u>	<u>163</u>	<u>178</u>	<u>118</u>	<u>194</u>	<u>356</u>	<u>274</u>
Total agricultural:	<u>684</u>	<u>571</u>	<u>673</u>	<u>789</u>	<u>824</u>	<u>933</u>	<u>1,628</u>
Nonagricultural...:	<u>18,928</u>	<u>17,476</u>	<u>26,960</u>	<u>26,490</u>	<u>31,711</u>	<u>40,109</u>	<u>45,437</u>
Total value of imports from Israel.....	19,612	18,047	27,633	27,279	32,535	41,042	47,065

1/ Less than \$500.

Source: U. S. Bureau of the Census.

The price Israel receives for her citrus exports reflects, for the most part, the demand in the European market. Western European countries account for nearly 80 percent of the world's imports of citrus. Spain is Israel's main competitor for the European market, followed by Morocco and Italy. The occurrence of frost or a bumper crop in these countries greatly influences the price Israel receives for her fruit.

Israeli and U.S. oranges do not compete extensively for markets; they are mostly different in type and marketed during different periods of the year. The United States, Israel, and South Africa market 80 to 90 percent of the world exports of grapefruit. Israel has a small share of the world lemon market; this market is supplied primarily by the United States, Spain, and Italy.

The prospect for continued high prices on the European citrus market in the coming years appears poor. A survey conducted by Food and Agriculture Organization of the United Nations (FAO), in April 1963, concerning the supply and consumption anticipated for citrus in Europe through the 1970/71 marketing year indicates supply will increase at a more rapid rate than demand. But, although Israel's citrus growers may have to operate in a buyer's market instead of a seller's market in future years, citrus is likely to remain one of the country's more profitable agricultural crops. This conclusion is based on the possibilities for technological improvements which may increase yields and lower production costs.

Although price decreases which would adversely affect profitability are of prime importance to Israel, a more immediate concern is the Common Agricultural Policy of the European Economic Community (EEC). Possible EEC restrictions with regard to citrus from "third" countries (outside the EEC) may limit the market available for Israeli citrus. Israel has made a 3-year agreement (1964-66) with the EEC countries, however, which allows tariff reductions of up to 40 percent on grapefruit.

But other developments may have an important effect on the citrus market. A rapid economic development in Afro-Asian countries may open new markets for citrus. Or, should the East European countries, and especially Soviet Russia, open their markets, a considerable change in the citrus market will be brought about. Another possibility is that Europe may tend to consume more citrus in the form of juices, or even as frozen juices, as has been the case here in the United States. An increase in processing facilities would be particularly important, because the juice industry provides an outlet for fruits rejected for export or consumption as fruit.

Projections: It is assumed that groves planted in 1961-65 will bear fruit only after 1965, so the 1965 production projections are based on the bearing capacity of the groves planted before 1960. Because the citrus crop is highly sensitive to climatic conditions, such as drought or frost, or to favorable conditions which bring about a bumper crop, production is projected at 820,000 tons for the 1964/65 season, and 880,000 tons for the 1965/66 season. These amount, respectively, to increases of 35 percent and 44 percent over 1960 production (table 10).

Per capita consumption is projected to increase from 55.7 kilograms in 1960 to 61.3 kilograms in 1965. Total domestic consumption in 1965 is thus projected at 155,000 tons. Assuming a production figure of 830,000 tons for calendar year 1965, 675,000 tons would be available for export.

The total citrus area is projected to reach 50,000 hectares by 1975. Such an expansion will result in planting lower-yield districts or land. Consequently any increase in the general level of yields will probably be offset by the lower yield of the new orchards. Assuming no change in the average yield, the 1975 citrus production is projected to reach 1,800,000 tons. This is a 117-percent increase over 1965. With domestic consumption projected at 216,000 tons, the export market must absorb 1,584,000 tons.

In evaluation, the 1965 and 1975 citrus projections contained in the Falk report appear reasonable. The export figures should not be considered entirely as fresh fruit exports, however. About 20 percent of the exports in 1965, and perhaps 30 percent by 1975, will be in the form of processed products, mainly juices.

Table 10.--Israel: Production of selected agricultural products, 1956-63 1/

Commodity	1956	1957	1958	1959	1960	1961	1962	1963
: - - - - - <u>1,000 metric tons</u> - - - - -								
Citrus.....	452	439	435.5	587.6	609.6	515.7	532.5	692.4
: - - - - -								
Poultry meat (live weight).....	23.2	22.2	34.2	40.7	45.7	54.6	66.4	66.5
: - - - - -								
Vegetables.....	231.0	242.0	265.0	270.5	296.2	277.1	280.5	298.5
: - - - - -								
Potatoes.....	92.5	93.0	98.0	88.0	81.8	85.2	111.0	109.0
: - - - - -								
Bananas.....	23.5	20.3	27.5	31.6	34.3	44.1	49.2	52.0
: - - - - -								
Deciduous fruit.....	11.8	16.6	19.5	30.0	37.5	51.9	71.6	<u>2/</u>
: - - - - -								
Peanuts.....	14.2	17.9	12.7	15.3	16.0	14.5	12.5	13.0
: - - - - -								
: - - - - - <u>Millions</u> - - - - -								
Eggs.....	510	630	886	1,027	1,114	1,290	1,273	1,030
: - - - - -								

1/ Years ending September 30.

2/ Not available.

Source: Central Bureau of Statistics, Israel.

Poultry Meat and Eggs

The poultry industry, although classified as a branch of agricultural production, is, in many respects, different from other branches of agriculture. It is independent of such factors as climate, soil, and rainfall. Its main characteristics are a short production cycle, relatively low capital investments, and rapid adoption of new production methods.

Poultry raising is important to Israel's agriculture and economy. The production of eggs and poultry meat increased several times over during the period 1954-60. This expansion in production was accompanied by far-reaching changes in the technological level, as reflected in production methods, in special breeds, and in the modernization of buildings and equipment. Together with the rise in production capacity, there was also a rise in the consumption of poultry products. The per capita consumption of fowl rose from 5.7 kilograms per capita in 1954 to 7 kilograms in 1960. Per capita consumption of eggs rose from 266 in 1954 to 345 in 1960.

The price of eggs is determined by the Government. In the 1950's, producers were guaranteed a high price and production increased accordingly. In 1957, a gap began to develop between production and local consumption, and a surplus resulted. A surplus of poultry meat did not occur until 1959, as domestic consumption absorbed all of the increased production up to that point.

The value of Israel's egg exports amounted to \$12.2 million in 1961, \$8.6 million in 1962, \$5.2 million in 1963, and is expected to decrease further in 1964 as a result of increasing difficulties in marketing eggs in Europe. The recent low prices netted by Israeli egg exporters are the result of both increased EEC tariffs and expanded egg production in importing countries such as Italy and Western Germany. Thus the exports of table eggs, which are the main poultry item shipped to Europe, have become completely uneconomical. The Ministry of Agriculture recently stated that the export of eggs to the Common Market countries involves large losses to both the Government and producers and should be avoided as far as possible. As a result, eggs have been diverted to cold storage, as well as for breakage and storage. The very low returns for eggs offered on the EEC markets also led to the agreement, made in June 1964, whereby Israel will sell 72 million eggs to Argentina at a price of 2 cents an egg f.o.b. The Poultry Marketing Board, which has been receiving about \$3.3 million annually as a subsidy for egg prices, both on the domestic and export markets, will bear the difference between the price obtained in Argentina and the higher price that will be paid to Israeli producers.

Poultry meat was considered separately from other meats in order to better understand the development in production and prices of meats. Red meats are imported, while poultry meat is exported. During the period studied, 1954-60, the prices of the two meats behaved completely differently; the price of poultry dropped, whereas the price of beef rose by far more than did the price of any other product. The decrease in the price of poultry meat reflects the considerable expansion in production and accounts for the rise in consumption. But, considering that the per capita production of poultry meat in 1960 was at the index level of 393 (1954 = 100), it is surprising that prices did not decline more than they did. The income elasticity of poultry meat is relatively low, and therefore there has been only a moderate change in demand owing to the change in income. The absence of a sharp decline in price for poultry meat during the period studied may be explained by the fact that poultry has a relatively high price elasticity, so that additional large quantities were consumed with only a moderate decline in price. It probably also reflects high cross-elasticities with other meats, so that when the price of poultry meat decreased, poultry substituted for other meats. The fact is that producers raised their production although prices dropped. The introduction of special meat breeds, greatly reduced feed-output ratio and man-days per unit of output, and other advances made it possible to increase production in spite of the decline in prices.

Projections: Total egg production in 1960 was 1,114 million, of which 402.7 million were exported. The Falk report projected egg production in 1965 at 1,237 million with 200 million for export. The per capita consumption of eggs, 345 in 1960, among the highest in the world, is projected to reach 385 by 1965 and 401 by 1975. The Falk report projects egg production by 1975 to reach 1,607 million with 190 million for export.

The production of poultry meat in 1965 is projected at 52,300 tons (70,400-tons live weight). Domestic consumption is projected to reach 51,800 tons, leaving 500 tons for export.

The production of poultry meat by 1975 is projected at 76,500 tons (102,300-tons live weight). With domestic consumption projected at 76,200 tons, the export market is projected to absorb 300 tons.

In evaluation, the egg exports projected in the Falk report are too high. Because of the loss of export markets the Government is encouraging a reduction in production. Production in 1965 will be near domestic needs--around 900-million eggs. If profitable markets are not found, it is likely that production by 1975 will not greatly exceed domestic demand.

The projected poultry meat exports appear reasonable and should they be met, Israel will not be a serious competitor with the United States for poultry meat markets through 1975. An accord with EEC countries regarding import levies could result in production and exports in excess of these projections, however.

Other Crops:

As stated, the purpose of the Falk report was to make projections for the more important agricultural products for the years 1965 and 1975. The study concerned itself with numerous commodities. Many are currently neither imported nor exported in any significant quantity, because domestic production satisfies most or all of the domestic demand. But these products are an important segment of Israeli agriculture, and two major branches, fruits other than citrus, and vegetables, are discussed briefly below.

Fruit other than citrus: Except for citrus, no projection of fruit exports were made in the Falk report. Israel produces and exports a great variety of fruits, but the only one exported in quantity is bananas. No attempt was made to project the quantities of fruit which will be absorbed by the processing industry. This does not imply that the processing industry may not eventually serve as an important outlet. It is, in fact, very likely that its importance will increase in the future.

The projected per capita consumption of fresh fruits for 1965 is 158 kilograms. This seems to be a relatively high level of consumption and any further expansion of domestic consumption is likely to be rather small. The projected per capita consumption for 1975 is 170.6 kilograms, 8.1 percent over the 1965 level. This rate of increase will not be the same for all fruits. Income elasticities indicate that the consumption rate of apples and pears will increase faster than that of plums, grapes, citrus, bananas, and melons. Domestic production should supply nearly all fruit needs through 1975.

Vegetables: Tomatoes, cucumbers, eggplant, peppers, and carrots constitute about two-thirds of total fresh vegetable production. The Falk report considers potatoes separately from fresh vegetables, but most data for both are combined.

Fluctuations in vegetable production sometimes result in a large supply for a short period. Surpluses accounted for about 12 percent of the produce marketed in 1960 and 8 percent in 1963. This surplus, as a rule, goes to industry or small quantities are exported. In 1963, the main exports were potatoes, 11,724 tons; onions, 1,172 tons; and carrots, 446 tons.

The per capita consumption of fresh vegetables and potatoes was relatively constant from 1953 to 1960 and is projected to change very little from 1960 to 1975. Production is projected to approximately equate projected consumption through 1975. Thus, Israel will not be a significant importer nor a significant exporter of fresh vegetables and potatoes by that date. Assuming an increase in productivity of 20 percent, the area in vegetables and potatoes will increase by 10.4 percent from 1965 to 1975. This land area will be largely that planted to field crops in 1960.

Table 11.--Israel: Value of imports of selected agricultural commodities, 1956-63 1/

Commodity	1956	1957	1958	1959	1960	1961	1962	1963
: - - - - - <u>1,000 dollars</u> - - - - -								
:								
Wheat.....	26,690	16,255	21,444	20,594	22,339	24,119	22,349	20,634
Sorghum.....	4,533	5,948	13,473	11,214	12,046	9,707	9,056	9,843
Corn.....	2,858	3,367	2,651	5,889	7,427	9,151	10,525	11,477
Barley.....	1,784	2,629	1,431	3,170	3,511	2,490	2,056	5,418
Oilseeds <u>2/</u>	6,475	14,147	13,107	14,925	20,771	14,505	23,371	21,735
:								
Cotton, raw.....	3,814	2,341	5,081	4,164	3,163	3,890	4,443	4,827
Meat <u>3/</u>	7,635	6,912	1,022	1,711	2,459	1,895	5,438	6,493
Tobacco, unmfd....	795	954	1,019	1,052	1,196	1,199	1,532	2,237
Rice.....	--	--	853	1,497	3,511	1,855	2,213	2,248
Dairy products....	<u>5,506</u>	--	13,249	2,380	396	1,514	1,450	2,020
:								
Total.....	<u>60,090</u>	<u>52,553</u>	<u>73,330</u>	<u>66,596</u>	<u>76,819</u>	<u>70,325</u>	<u>82,433</u>	<u>86,932</u>
:								
Other agricultural:	<u>51,990</u>	<u>22,916</u>	<u>22,475</u>	<u>35,277</u>	<u>24,551</u>	<u>26,647</u>	<u>45,008</u>	<u>55,226</u>
:								
Total.....	112,080	75,469	95,805	101,873	101,370	96,972	127,441	142,158
:								

1/ Years ending September 30.2/ Includes copra, soybeans, and others.3/ Other than poultry; frozen and canned meat.

Source: Central Bureau of Statistics, Israel.

AGRICULTURAL IMPORTS

Israel is a net importer of farm commodities. Imports of principal agricultural products in 1963 were valued at \$142.2 million--roughly 20 percent of the value of all imports. The value of agricultural imports has been steadily increasing, but as a percentage of total imports the value has been nearly constant. Under Israel's most recently formulated economic policy, farmers are being called upon to increase production for both consumption and export, and to increasingly substitute locally produced goods for imports. Government support of agricultural industries will be limited to those of proven competitive ability in both domestic and world markets.

In 1963, imports of the eight agricultural commodity groups discussed earlier in the report, and their products, amounted to \$86.9 million, or 61 percent of the total agricultural imports (table 11).

U. S. agricultural exports to Israel have increased from \$47.5 million in 1956 to \$65.8 million in 1963 (table 12). Israel, once principally a Public Law (PL) 480, Title I 2/ outlet (tables 13 and 14), is buying more and more U.S. farm products for dollars--a trend that is expected to accelerate in future years 3/. Prospects for increasing dollars purchases appear especially good for U.S. grain, soybeans, cotton, rice, tobacco, and meat.

2/ U. S. Public Law 480, The Agricultural Trade Development and Assistance Act, enacted June 1954.

3/ Because of lags in reporting and differences in valuation procedures tables 13 and 14 are not exactly comparable with other tables presenting U.S. trade data.

Table 12.--United States: Value of agricultural exports to Israel,
calendar years 1956-63 ^{1/}

Commodity	1956	1957	1958	1959	1960	1961	1962	1963
<u>1,000 dollars</u>								
Wheat & wheat flour.....								
flour.....	18,932	17,957	12,406	12,739	14,328	13,081	19,382	14,173
Barley.....	427	2/	1,414	1,631	1,952	795	1,145	446
Corn, except seed.....	2,031	2,866	1,716	4,560	6,344	7,798	7,717	9,934
Grain sorghums....	3,289	4,422	10,011	9,965	9,507	7,532	6,977	8,438
Rice, milled.....	98	50	14	812	1,128	944	863	1,408
Meat including								
canned meat.....	5,368	5,511	167	197	180	277	365	1,126
Nonfat dry milk..	861	562	1,919	1,535	9	547	662	890
Cottonseed oil....	2,348	3/	760	1,399	1,734	832	176	971
Soybean oil.....	--	--	1,141	441	2,153	3,230	5,138	4,350
Other veg. oils								
and fats.....	33	80	102	524	278	38	26	159
Soybeans.....	4,219	6,732	8,343	15,244	13,588	14,790	11,004	19,225
Seed, except								
oilseeds.....	251	220	197	294	240	268	211	309
Tobacco.....	198	302	193	210	333	222	378	404
Cotton, raw.....	3,059	2,043	2,965	2,714	2,276	962	1,516	1,156
Food for relief								
or charity.....	1,455	1,490	1,360	950	625	1,419	1,100	270
Other agricultural products.....	4,939	3,124	10,909	1,964	1,900	1,605	1,345	2,538
Total agricultural products:	47,508	45,359	53,617	55,179	56,575	54,340	58,005	65,797
Nonagricultural..	45,264	48,078	48,001	55,891	61,809	82,676	103,063	88,446
Total exports..	92,772	93,437	101,618	111,070	118,384	137,016	161,068	154,243

^{1/} Excludes grains and soybeans shipped from Canadian ports. Such shipments totaled \$3.9 million (\$3.4 million for soybeans and \$0.5 million for grains) in 1961, \$5.0 million (\$2.8 million for soybeans and \$2.2 million for grains) in 1962, and \$5.7 million (\$4.4 million for soybeans and \$1.3 million for grains) in 1963.

^{2/} Less than \$500.

^{3/} If any, included in "other agriculture".

Source: U. S. Bureau of the Census.

Wheat

Wheat products form a large part of the national food supply. In 1959/60, wheat and wheat flour products supplied some 40 percent of the total calories, 46 percent of the total proteins, and some 6 percent of the total fats consumed.

Bread is the most important wheat product. But there is a clear trend towards a decline in the per capita consumption of wheat and wheat products. The demand analysis of the Falk report shows flour and cereals as having a negative income elasticity, which means a rise in income results in a decline in the quantity consumed. There was an average decline of 4 percent a year in the per capita consumption of bread between 1952/53 and 1959/60.

An efficient milling industry developed rapidly in Israel; flour imports have been replaced by grain imports. No significant quantities of flour have been imported since 1953.

In August 1962, wheat flour was freed from price controls. Up to this date, the Government imported wheat, which in turn was distributed to millers who were paid a fixed rate for their services. The flour was then sold to bakeries at a subsidized price. Bakeries also received direct support in proportion to their volume of business. In effect, the retail prices of bread were controlled by the Government, though no price ordinance existed. Following the removal of the wheat flour subsidy and the lifting of the price controls on bread an increase in bread prices led to a further decrease in bread consumption.

Table 13.--United States: Value of agricultural exports to Israel under PL 480 Title I, calendar years 1956-63

Commodity	1956	1957	1958	1959	1960	1961	1962	1963
<u>1,000 dollars</u>								
Wheat.....	8,736	4,990	9,266	10,146	11,100	7,376	10,367	10,064
Barley.....	485	--	1,419	1,592	2,606	--	1,800	--
Corn.....	1,898	2,364	1,644	4,358	6,313	5,186	2,990	8,685
Grain sorghums....	2,145	--	9,022	9,177	6,870	3,802	2,223	685
Rice.....	--	--	--	500	754	708	320	601
Cotton.....	1,359	48	737	979	1,014	117	--	--
:								
Tobacco.....	189	41	109	196	200	54	150	200
Butter.....	1,795	255	6,634	--	--	--	--	--
Cheese.....	300	800	1,300	--	--	--	--	--
Dried whole milk.:	--	--	200	--	--	--	--	--
Nonfat dry milk.:	255	271	1,929	1,459	--	699	447	611
:								
Cottonseed oil....	2,200	--	808	1,749	1,695	787	--	645
Soybean oil.....	--	--	1,212	310	2,537	3,521	5,442	4,404
Tallow.....	100	--	400	--	--	--	--	316
Beef.....	5,662	4,337	--	--	--	--	--	--
Prunes.....	--	--	100	--	--	--	--	--
Dry edible beans.:	275	--	152	179	--	--	355	--
:								
Total market value.....								
	25,399	13,106	34,932	30,645	33,089	22,250	24,094	26,211
:								

Source: U. S. Dept. Agr., Foreign Agr. Serv.
 "Title I, Public Law 480," SDS-11-63 and SDS-1-64.

Table 14.--United States: Agricultural exports to Israel under PL 480,
Title I, by volume, calendar years 1956-63.

Commodity	1956	1957	1958	1959	1960	1961	1962	1963
<u>Metric tons</u>								
:								
Wheat.....	143,530	81,540	147,940	163,480	180,170	117,260	166,430	156,610
Barley.....	10,060	--	31,200	33,350	52,830	--	34,040	--
Corn.....	34,230	45,860	33,130	89,990	123,710	108,170	61,210	163,870
Grain sorghums....	58,030	--	221,150	216,670	166,840	92,080	49,390	14,920
Rice.....	--	--	--	4,200	7,020	5,790	2,370	4,510
:								
Cotton.....	1,680	70	1,140	1,540	1,840	180	--	--
Tobacco.....	150	20	80	120	130	30	90	140
Butter.....	2,080	300	7,700	--	--	--	--	--
Cheese.....	590	1,580	2,560	--	--	--	--	--
Dried whole milk.:	--	--	210	--	--	--	--	--
:								
Nonfat dry milk.:	1,180	1,230	9,060	8,950	--	4,900	3,580	4,200
Cottonseed oil.:	6,000	--	2,230	5,840	5,530	2,000	--	2,780
Soybean oil.....	--	--	3,480	1,000	11,680	12,530	22,440	19,910
Tallow.....	480	--	1,870	--	--	--	--	2,330
Beef.....	6,360	4,870	--	--	--	--	--	--
:								
Prunes.....	--	--	320	--	--	--	--	--
Dry edible beans.:	1,850	--	1,000	960	--	--	990	--
:								
Total.....	266,220	135,470	463,070	526,100	549,750	342,940	340,540	369,270

Source: U. S. Dept. Agr., Foreign Agr. Serv.,
"Title I, Public Law 480." SDS-11-63 and SDS-1-64.

Israel produces 15-20 percent of its wheat requirements. The percentage varies, as there have been considerable fluctuations from year to year in local wheat production. These fluctuations reflect the effect of changes in rainfall because the size of the area planted to wheat, mainly unirrigated land, has remained relatively constant. The wheat produced in Israel is primarily durum, which is best suited for the manufacture of noodles and macaroni. Domestic production of durum sometimes exceeds local demand, so small quantities are exported from time to time.

Production is highest in the Galilees and in the south, but the grain is grown throughout the country wherever there is sufficient water. Wheat is the major winter field crop. But production is unlikely to expand significantly in the future, as Jewish farmers generally prefer to raise feed grains for conversion to high-value foods, such as eggs, meat, and dairy products, rather than raise food grains.

Falk report projections: As a result of the decline in per capita wheat consumption, the Falk report projects that demand in 1965 will be only 5.5 percent above 1960. The increase in total demand reflects the increased population. Wheat for direct consumption in 1965 is expected to total nearly 316,000 tons. Added to this is waste, animal feed of lower grade wheat, and seed, making the final demand projection 345,000 tons.

The area in wheat in 1965 is projected at 40,500 hectares, which would yield about 81,000 tons. Thus the net demand for imports of wheat in 1965 is 264,000 tons. As mentioned earlier, the 1965 projections should be considered an average of the period 1964-66. This is especially important for field crops such as wheat. In 1963, wheat production was 54,700 metric tons while the 1964 crop, because of a rainy winter, reached an unprecedented 130,000 tons.

The 1975 per capita consumption of flour and cereals is projected at 98.8 kilograms which is 82.6 percent of the level projected for 1965 (119.6 kilograms). The total demand for 1975 (including allowance for waste, seed, and feed, etc.) is projected at 387,000 tons. No change with respect to the composition of winter field crops is anticipated, so production in 1975 should be similar to that projected in 1965--81,000 tons. This means that 306,000 tons of wheat will have to be imported in 1975.

Implications: Israel's main agricultural import from the United States is wheat. During 1961-63, wheat imports from the United States averaged \$15.5 million per year on a value basis, and 246,400 tons by volume. Israel has obtained sizeable quantities of wheat under Title I of PL 480. Most Israeli wheat imports not supplied by the United States come from Canada.

Table 15.--Israel: Production and imports of wheat, 1956-64 and projections for 1965 and 1975

Year	Years ending September 30		Calendar years	
	Production	Total imports	U.S. exports	
			to Israel	
: - - - 1,000 metric tons - - -				
1956	74.0	331.9	307.6	
1957	83.0	319.6	247.5	
1958	62.5	278.8	208.0	
1959	73.7	283.8	205.9	
1960	41.3	283.5	236.0	
1961	65.9	321.9	218.2	
1962	51.7	275.2	297.3	
1963	54.7	285.8	223.8	
1964	130.0	186.5 ^{1/}	^{2/}	
1965	81.0	264.0	210.0	
1975	81.0	306.0	230.0	

^{1/} 11-month period.

^{2/} Not available.

Source: Central Bureau of Statistics, Israel; Falk report, and U. S. Bureau of the Census.

The United States is expected to provide about 80 percent of Israel's wheat needs in 1965. With total imports projected at 264,000 tons, the U.S. share would be about 210,000 tons. These levels are considered minimal, though, as the 1965 total import projection appears low. Israel's wheat imports were in excess of 264,000 tons every year during the period 1956-63 (table 15).

Other countries, such as Canada, are expected to increase their efforts to gain a larger share of the Israeli wheat market in the future. Consequently, U.S. exporters will need to maintain intensive marketing efforts if they are to maintain their present share of this market. It is projected that the United States will sell about 230,000 tons of wheat to Israel in 1975, or about 75 percent of her total needs.

Feed grains

Feed grains grown in Israel consist of sorghum, corn, barley, and some low-quality wheat. The level of production of these crops is largely determined by the amount of scarce agricultural resources--mainly land and water--not planted to other crops. If one draws an imaginary line across Israel at Tel Aviv, he finds that 50 percent of the cultivable land is situated north and 50 percent south of this line. However, about 85 percent of all water available is in the north and 15 percent in the south. The annual rainfall in the agricultural areas of the country varies between less than 8 inches in the south (Beersheba area) to more than 31 inches in the north (Upper Galilee). Thus the crops in the south are subject to severe drought and different crops are grown there than are grown in the north. The Jordan water project, which brings water from Lake Tiberias in the north, gives priority to irrigation of the arid south, but this will be of little significance in 1965.

In 1962, 50 percent of the unirrigated land area was planted to wheat (47,600 hectares) and barley (65,000 hectares). The type of crops that can be grown on unirrigated land is quite limited, so the area of land allocated to barley and wheat has remained relatively stable over the past 10 years.

Sorghum and corn are summer grains and are grown on both irrigated and unirrigated land. The use of irrigated areas for grain growing has diminished in recent years as other crops (cotton, peanuts, and sugarbeets) have received increasingly large allocations of the limited water available, at the expense of summer grains. The area of irrigated summer grains was at its peak in 1957, when it reached 8,200 hectares; other crops in that year occupied 11,600 hectares. In 1960, irrigated summer grains occupied only 1,700 hectares, whereas other crops occupied 18,700 hectares.

Average annual imports of feed grains rose fourfold from 1950-54 to 1955-60. The major part of this increase was covered by imports of corn and grain sorghums which rose sixfold, whereas imports of barley increased by only one-third. The large supplies of imported feed permitted expansion of Israel's poultry and livestock industry.

Falk report projections: The demand for feed grains is dependent on the consumption requirements of cattle, poultry, and pond fish. The demand projections for 1965, as contained in the Falk report, are: Poultry, 288,000 tons; cattle, 103,000 tons; and fish, 30,000 tons. Domestic feed-grain production for 1965 is projected at 132,000 tons with the following composition: Corn and sorghum, 45,000 tons; barley, 71,000 tons; and wheat, 16,000 tons.

To summarize, the 1965 projections are: Consumption, 421,000 tons; production, 132,000 tons; and import needs, 289,000 tons.

The 1975 demand projections for feed grains, by branches, are: Poultry, 393,000 tons; cattle, 114,000 tons; and fish, 33,000 tons. No major structural changes in the production of feed grains are projected to take place by 1975, so production is expected to approach 132,000 tons.

In summary, the 1975 projections are: Consumption, 540,000 tons; production, 132,000 tons; and import needs, 408,000 tons.

Revised projections and implications: The import projection for 1965, 289,000 tons, is too low, because the demand projection is too low. Annual feed-grain imports from 1958 through 1963 were in excess of 300,000 tons (table 16). In 1963, 453,900 tons of feed grains were imported. Under the PL 480 agreements signed with Israel in December 1964, Israel is to receive 210,000 tons of feed grains under Title I, on condition that Israel will import from the Free World, including the United States, as usual marketings, not less than 250,000 tons of feed grains during calendar year 1965. If these conditions are met, imports in 1965 will be at least 460,000 tons.

During the period 1961-64, the aggregate imports of feed grains were: Barley, 14 percent; sorghum grains, 40 percent; and corn, 46 percent. Most of the imported corn and a large part of the sorghums are fed to poultry. Use of barley is limited mainly to cattle, goat, and sheep feeds.

In poultry, the layer and breeder feed formulas have included 45-percent corn and from 10.7-to 17.7-percent sorghum. These formulas, however, are undergoing changes as a result of recent animal nutrition research, and beginning in 1965, there will be an almost complete reversal in the percentages of corn and grain sorghum. Assuming an import level of at least 460,000 tons of feed grains in 1965, the composition is projected as follows: Barley, 65,000 tons; sorghum grains, 210,000 tons; and corn, 185,000 tons.

Israel obtains feed grains from various countries, but the only constant and reliable source of feed grains has been the United States. During the period 1959-62, the United States supplied Israel with 30 percent of its barley needs and 95 percent of its sorghum and corn needs. Should the United States maintain the share of the market it had during 1959-62, it may expect to supply Israel in 1965 with approximately 20,000 tons of barley; 190,000 tons of sorghum; and 165,000 tons of corn.

A major portion of the imports from the United States have been made under Title I of PL 480, but sales for dollars are very likely to increase in future years. Israel will probably be a cash market for all feed-grain imports by 1975. The major U.S. competitors for the Israeli feed-grain market have been Argentina, Turkey, and Cyprus.

The difference between the revised 1965 import projection and the Falk report projection is 171,000 tons. The difference between the 1975 import level projected in the Falk report and the actual 1975 import level is expected to be at least that magnitude. The United States is projected to supply about 30 percent of Israel's barley needs and 80 percent of its corn and sorghum needs in 1975.

Table 16.--Israel: Production and Imports of feed grains, 1956-64, and projections for 1965 and 1975

Year	Years ending September 30			Imports			Calendar years					
	Production			Imports			U.S. exports to Israel					
	Barley	Sorghum	Corn	Total	Barley	Sorghum	Corn	Total	Corn			
- - - - - 1,000 metric tons - - - - -												
1956	85.0	25.5	23.0	158.5	1/ 26.4	1/ 25.6	1/ 9.3	61.3	9.6	70.3	33.2	113.0
1957	74.2	37.7	38.0	149.9	41.6	98.4	42.3	182.3	--	98.3	50.3	149.6
1958	53.3	34.4	28.3	116.0	23.7	243.7	41.3	308.7	30.5	242.5	33.7	306.7
1959	65.0	40.7	14.7	120.4	49.8	193.2	90.8	333.8	34.6	216.8	39.2	290.6
1960	26.6	15.6	8.4	50.6	54.5	209.4	120.3	384.2	39.6	216.0	123.7	379.3
1961	62.5	34.3	7.8	104.6	46.0	179.7	156.2	381.9	19.8	178.8	153.2	351.8
1962	48.2	43.4	8.1	99.7	32.2	168.1	178.3	378.6	19.9	158.1	160.0	338.0
1963	36.3	40.0	5.8	82.1	89.6	178.7	185.6	453.9	10.5	180.4	184.9	375.8
1964	94.0	80.0	6.0	180	2/ 44.6	2/ 76.0	2/ 184.3	2/ 304.9	3/	3/	3/	--
1965	4/ 71.0	4/ 5/ 45.0	--	4/ 132.0	--	--	--	4/ 289.0	--	--	--	--
1975	4/ 71.0	4/ 5/ 45.0	--	4/ 132.0	--	--	--	4/ 408.0	--	--	--	1/

1/ Annual average, 1950-54.

2/ 11-month period.

3/ Not available.

4/ Projection contained in Falk report. Total production projection includes 16,000 tons of low-grade wheat.

5/ Includes corn and sorghum.

6/ Revised projection.

7/ Not quantitatively projected.

Sources: Central Bureau of Statistics, Israel; Falk report; and U. S. Bureau of the Census.

Dairy Products

Milk production increased 71 percent during the period 1956-62. This sharp increase in production reflected an increase in dairy cattle numbers and a marked improvement in productivity. In 1963, milk production was about one-third of 1 percent less than in 1962, reversing a consistent upward production trend. The 1963 production was 315.2-million liters of cow's milk and 43.3-million liters of goat's and sheep's milk. Goat's milk is consumed primarily on the farm, and sheep's milk is used mainly for processing. In 1964, 343.5-million liters of cow's milk was produced. This is 9-percent more than in 1963, but still less than estimated demand at 1964 prices.

In early 1964, the Israeli government approved plans for holding milk production below projected consumption levels in the Jewish fiscal years ending March 31, 1965-66. Production would be sufficient to meet the population's requirements for fluid milk, but not for dairy products. Dairy imports, which until late 1963 consisted mainly of dry milk, are now to be augmented by imports of butter and hard cheese.

The Government's decision to allow domestic production to lag behind consumption marked a turning point in Israel's agricultural policy, which now recognizes that production of more milk than can be consumed in fluid form is extremely uneconomical. Fluid milk that is used for butter and cheese yields low returns, and such use was largely responsible for dairy subsidies which, from 1959-63, averaged around \$8 million a year. Any decline in milk production implies that irrigated land used for forage production for dairy cattle may be diverted to other crops for home consumption or export.

Falk report projections: The per capita consumption of milk and milk products, which has been lower than in other countries with similar per capita incomes, is projected to increase from 148.5 liters in 1960, to 164.2 liters in 1965, (82.7 liters fluid milk and 81.5 liters in the form of dairy products). Total consumption in 1965 is projected at 415.0-million liters of fluid milk (373.0, cow's milk, 42.0, sheep's and goat's milk). The Falk report concludes that the milk supply will be adequate to meet the demand.

The 1975 per capita consumption of milk and milk products is projected at 173.4 liters (76 liters fluid milk and 97.4 liters in the form of dairy products). The decline in per capita consumption of fluid milk from the 1965 level reflects the anticipated increase in urbanization. In Israel the per capita consumption of fluid milk is lower among urban people than it is among rural people.

The total consumption of fluid milk in 1975 is projected at 255-million liters. Total demand for processing is projected at 326-million liters, so total demand for milk for all consumption outlets is 581-million liters. Projected consumption of goat's and sheep's milk is 49-million liters, leaving 532-million liters to be supplied by cow's milk. The supply of milk is projected to be adequate to meet this demand.

The high cost of raising cattle has required constant selection of the quality of cows in the herd. Because of careful selection and care, the production per cow in Israel is among the highest in the world. Production per cow in 1965 is projected at 4,780 liters and is projected to increase to an optimistic 6,000 liters per cow by 1975. The yield per cow affects the size of the dairy herd, which in turn affects the production of meat and the demand for feed grains and soybean oilcake.

Revised projections and implications: The Falk report projected that in 1965 domestic milk production would be adequate to supply the milk and dairy product needs of the country. If the expectations of the new Government policy are met, however, the projection will be too high. According to 1964 Government plans, production in 1964/65 will be adequate to meet fluid milk demands, but will be held about 16 million liters below the volume needed to supply the demand for other dairy products. For 1965/66 production is to be held about 24 million liters below the production level necessary to supply Israel with all her dairy needs. For purposes of this report, the 1965 import level is considered as an average level for the period 1964-66. Therefore, the revised dairy-product import projection for 1965 is equivalent to 20 million liters of milk (table 17).

Table 17.--Israel: Production and imports of dairy products, 1956-64, and projections for 1965 and 1975

Year :	Years ending September 30				Calendar years					
	Production		Total imports		U.S. exports to Israel					
	Cow's milk	Sheep's milk	Whole milk	Butter powder	Cheese	Dry milk	Nonfat milk	Butter	Cheese	
	<u>--1,000 kiloliters--</u>					<u>Metric tons</u>				
1956..:	171.5	38.1	10,044	5,330	2,100	10,172	2,082	887	1	
1957..:	184.0	40.8	8,603	134	2,107	4,705	9	1,598	92	
1958..:	216.5	41.5	12,899	8,003	3,671	8,784	7,718	2,901	319	
1959..:	259.5	41.3	10,859	1	4	9,117	0	1	0	
1960..:	277.3	40.5	733	1	0	30	1/	0	3	
1961..:	283.5	43.6	6,364	0	20	3,597	1/	0.9	7	
1962..:	316.0	43.4	5,160	1	21	3,641	1/	2.3	24	
1963..:	315.2	43.3	6,041	766	10	5,435	750	0	22	
1964..:	343.5	43.5	2/	2/	2/	2/	2/	2/	2/	
1965..:3/	373.0	3/42.0	3/0	3/0	3/0	--	--	--	--	
1965..:4/	(353.0)	--	5/	5/	5/	6/	6/	6/	6/	
1975..:3/	532.0	3/49.0	3/0	3/0	3/0	--	--	--	--	

1/ If any, included in other dairy products.

2/ Not available.

3/ Projection contained in Falk report.

4/ Revised projection.

5/ Revised projection is dairy product equivalent to 20 million liters of fluid milk. No breakdown as to volume of dairy products made.

6/ Not quantitatively projected.

Sources: Central Bureau of Statistics, Israel; Falk report; and U. S. Bureau of the Census.

Dairy-product imports in 1965 will consist of dry milk, hard cheese, and butter. The United States has supplied most of Israel's needs for these products in the past few years. These products were purchased primarily under Title I of PL 480 but the Title I agreement with Israel for 1965 does not provide for dairy products. So, barring an amendment to the agreement, these will be cash purchases.

Any projections as to the composition of the dairy-product imports would be highly conjectural and therefore are not made. The quantity of each product which will be imported will be largely determined by how Israel processes its own milk production. Suffice to say there is a good market for dairy products in Israel in 1965.

The Falk report projects there will be no imports of dairy products in 1975. But, should the Government maintain its present policy of allowing domestic milk production to lag behind total dairy consumption, an import demand for butter, cheese, and dry milk will continue. While import projections are not made, it is highly possible that a good market for dairy products will exist through 1975. The Netherlands, Denmark, and Australia are expected to be strong competitors of the United States for this market.

Meat Other Than Poultry

Meat production has risen from 1.0 percent of the value of total agricultural production in 1954 to 8.2 percent in 1962. About half of Israel's meat supply is obtained from dairy herds. The production of beef cattle was not established until the early 1950's. Beef cattle now account for about 10 percent of total meat supplies.

There are two principal sources of beef. (a) Male calves from the milk herds are fattened with intensive feeding. In the early years of the State, it was the practice to slaughter such calves at the age of 1 week. Today the calves are fattened, primarily in the milk herds, with about three-fourths of the ration composed of concentrates. Their growth is rapid and they reach a weight of around 1,000 pounds in slightly over a year. (b) There are also beef herds including the Hereford, Brahman, and Santa Gertrudis breeds, as well as Yugoslavian and local cattle.

The total number of cattle on Jewish farms, dairy and beef, increased from 152,400 in 1958 to 207,300 in 1962. The number of dairy and beef cattle on Arab farms in 1958 was about 40,000, and has remained near that level since then. Arab cattle are counted separately from the cattle raised on Jewish farms, because they are entirely drawn from the undeveloped local breed and are raised under completely different conditions.

The number of sheep in Israel has remained relatively static in recent years. Sheep on Jewish farms increased from 117,000 in 1958 to 125,000 in 1962. The number of sheep on Arab farms decreased from approximately 70,000 to 67,000 during this same period.

Other meats produced in Israel are primarily from goats and pigs. Goats raised on Jewish farms decreased from 40,000 in 1958 to 30,000 in 1962. Arab farmers owned nearly 134,000 goats in 1962, an increase of 5,000 since 1958. The raising, keeping, and slaughter of hogs in Israel is forbidden except in the Nazareth District and in Christian settlements whose limits are specifically defined by law. In 1963, 49,500 pigs were slaughtered.

Falk report projections: The per capita consumption of meat in 1965 is projected at 13.0 kilograms, an increase of 2.3 kilograms over 1960. At this rate, total consumption in 1965 will approach 32,900 tons. The meat supply in 1965, as indicated in table 18, is projected at 24,200 tons. Import needs for 1965 are therefore placed at 8,700 tons.

Table 18.--Israel: Production of meat, other than poultry, 1960 and projections for 1965 and 1975

Type of meat	1960	1965	1975
: - - 1,000 metric tons - -			
Dairy herd beef.....	--	12.8	14.5
Beef herd beef.....	--	2.3	3.6
Arab farming beef....	--	1.4	2.4
Total beef.....	10.4	16.5	20.5
Mutton.....	2.0	2.1	3.6
Other meat.....	4.9	4.2	6.6
Offal.....	1.8	1.4	1.8
Total.....	19.1	24.2	32.5

Sources: Central Bureau of Statistics, Israel; and Falk report.

Per capita consumption by 1975 is projected to approach 15.8 kilograms. Thus the total demand for meat is placed at 52,900 tons. As the 1975 domestic meat supply is projected at 32,500 tons, 20,400 tons of meat will have to be imported if domestic demand is to be satisfied.

Revised projections and implications: Meat production in 1965 will be near the level projected in the Falk report--24,200 tons. But the demand projection is too low. There has been an extraordinary demand for red meats, especially beef, in recent years. Total meat imports in 1960 were 3,000 tons while imports during the first 11 months of 1964 amounted to 20,343 tons (table 19).

The high level of meat import is likely to continue. A Government policy to reduce agricultural imports, in order to close the deficit in the balance of trade, would lead to a greater price increase in meats than in other products because of the high negative price elasticity for meats. It is likely that the considerations which favor suppressing increases in the cost-of-living index will lead to continued high import levels of meat. In fact, the Ministry of Commerce and Industry has proposed that in view of the rising demand for fresh beef and the relatively low supply of cattle for slaughter, duty-free import of live cattle for slaughter be allowed.

In light of the increased demand for beef and the likelihood of continued imports, the import projection for 1965 is revised to 25,000 tons--a volume far higher than the 8,700 tons projected in the Falk report. U.S. meat exports to Israel in 1965 are projected at 6,000 tons which will be a larger share than normal because of short supply in Argentina. About 3,000 tons will be imported under PL 480. Beef imported by Israel must be slaughtered under Israeli rabbinical supervision, and U.S. cash sales will hinge on its supply of beef of the type preferred, coupled with its ability to compete with other suppliers. The United States is handicapped by Israel's preference for lean beef from other sources--Argentina and Yugoslavia--as well as by stiff competition from these and other nations having trade agreements with Israel.

Table 19.--Israel: Imports of meat other than poultry, 1956-64, and projections for 1965 and 1975

:Years ending :		Calendar years			
: September 30:		U.S. exports to Israel			
Year:	<u>Total imports:</u>	Meat and meat products	Beef, and veal, canned	Beef and veal, fresh and frozen	Other meat
:		<u>Metric tons</u>			
1956 :	13,600	17.2	6,140.8	285.3	6,443
:					
1957 :	8,600	26.8	5,453.1	215.9	5,696
:					
1958 :	12,200	24.0	12.2	93.4	130
:					
1959 :	2,878	67.1	22.7	100.7	190
:					
1960 :	3,051	5.9	23.1	103.0	132
:					
1961 :	3,660	1.8	60.3	178.3	240
:					
1962 :	11,992	0	82.6	278.1	361
:					
1963 :	13,445	1.8	885.4	319.3	1,206
:					
1964 :	<u>1/</u> 20,343	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
:					
1965 :	<u>3/</u> 8,700	--	--	--	--
:	<u>4/</u> (25,000)	--	--	--	6,000
:					
1975 :	<u>3/</u> 20,400	--	--	--	<u>5/</u>
:					

1/ 11-month period.

2/ Not available.

3/ Projection contained in Falk report.

4/ Revised projection.

5/ Not quantitatively projected.

Sources: Central Bureau of Statistics, Israel; Falk report; U.S. Bureau of the Census

The livestock industry in Israel is unlikely to expand materially in future years because of the small amount of land suitable for forage production and grazing. Because of the limited expansion possibilities and the increase in demand for meat products, the 1975 import level is expected to be approximately double the quantity projected in the Falk report (20,400 tons). It is likely that the imports will consist primarily of frozen beef. The United States is projected to supply about 10 percent of Israel's 1975 import needs.

Cotton

Cotton was first grown on a commercial scale in Israel in 1953. The cotton grown is predominately the longer staple lengths of the upland type. Extra long staple cotton also has been grown on a small scale since 1956.

Domestic cotton production is controlled by the Cotton Production and Marketing Board, which is composed of Government officials and cotton growers and processors. The Board supervises the growing, picking, and marketing of the entire crop. Government subsidies are paid to producers in amounts equal to the difference between the fixed price to mills and a predetermined price to growers. Cotton subsidies in 1962 totaled \$3.3 million.

The local production of cotton rose from 2,200 tons of lint in 1955 to 10,650 tons in 1960. The 1962 cotton crop yielded 16,000 tons from 16,400 hectares.

But the trend in Israel's cotton production was reversed in 1963 when the cotton area decreased to 13,000 hectares. The decline in cotton area was attributed mainly to the low price received for cotton in relation to prices received for other crops. It is estimated that, in 1964, 13,000 hectares were again planted to cotton. The Government has officially recommended that the cotton-growing area be expanded to 15,000 hectares in 1965. Over 96 percent of the 1963 crop was harvested mechanically.

Textiles are manufactured from various fibers in Israel, of which cotton is the most important. In the late 1950's, there were shortages of yarn in Israel, causing the Government to push the expansion of spinning capacity. In 1960, there were 167,000 spindles in spinning mills and overexpansion became apparent. But the expansion rate continued and, at the end of 1963, the number of spindles installed was 317,000, of which 287,000 were in operation. Transfer of cotton-growing areas to the south where new gins were established resulted in idle gin capacity in the north. Ginning capacity has now reached a level sufficient to handle cotton production from an area of 20,000 hectares, which is far in excess of current and near-future production areas.

In the year ending July 31, 1964, local mill requirements totaled an estimated 23,676 metric tons of raw cotton. Although this constitutes a 22-percent increase over the 1962/63 level, spinning capacity in the country was still under-utilized. Less than half of the cotton goods manufactured in 1964 were consumed domestically. However, cotton exports, which were hitherto chiefly in the form of cotton yarn, have been unprofitable. Efforts are currently being expended to encourage conversion of locally spun cotton into high-quality finished products acceptable in export markets.

Falk report projections: The Israeli projections for 1965 and 1975 was based on a study which were completed earlier than the other commodity studies; the base year for the calculations was 1958. The projected cotton acreage for 1965 was 26,900 hectares and projected production was 22,800 tons. Consumption, based on an income elasticity of 0.7 for raw cotton, was projected at 6.1 kilograms per capita or 15,400 tons total, leaving 7,400 tons for the export market.

For 1975, the Falk report projected the total production of cotton fiber to reach 33,000 tons and domestic consumption at 7.2 kilograms per capita or 24,100 tons. This would leave 8,900 tons for export.

Revised projections and implications: Israel will be an importer of raw cotton in 1965, instead of an exporter as projected in the Falk report. A planted area of 15,000 hectares in 1965, yielding 1.04 tons per hectare, would result in a total production figure of 15,600 tons. Milling requirements of 23,000 tons of raw cotton and exports of 3,600 tons would result in the need for 11,000 tons of cotton imports in 1965 (table 20).

Table 20.--Israel: Production and imports of raw cotton,
1956-64, and projections for 1965 and 1975

Year	Years ending September 30		Calendar years
	Production	Total imports	U.S. exports to Israel
	<u>Metric tons</u>		
1956	3,200	4,328	3,631
1957	4,100	3,117	2,958
1958	4,860	6,501	4,082
1959	7,300	5,965	4,082
1960	10,650	4,573	3,629
1961	14,500	5,101	1,361
1962	16,070	5,716	2,268
1963	13,420	<u>1/</u> 6,206	1,814
1964	15,000	<u>1/</u> 10,197	<u>2/</u>
1965	<u>3/</u> 22,800	<u>3/</u> -7,400	--
	<u>4/</u> (15,600)	<u>4/</u> (11,000)	5,000
1975	<u>3/</u> 33,000	<u>3/</u> -8,900	--

1/ Trade during cotton marketing year, beginning August 1 through July 31.

2/ Not available.

3/ Projection contained in Falk report. Report projected exports of raw cotton in 1965 and 1975.

4/ Revised projection.

Sources: Central Bureau of Statistics, Israel; Falk report, and U.S. Bureau of the Census.

As the government is heavily committed to sustain the current production and employment level in the textile industry, cotton requirements will presumably remain at a high level, notwithstanding trade difficulties. Thus, cotton growers in Israel are assured of a home market for most of the crop. However, the dependence is not mutual, and it appears that local spinners are becoming decreasingly dependent on Israeli-grown cotton for their supply. Cotton imports nearly doubled from 1962 to 1964. The rise in imports was accompanied by a fall in exports which declined from 4,567 tons in 1963 to 3,675 tons in 1964.

Available data indicate the United States will supply Israel with approximately 50 percent of her cotton needs during the 1964 season and is expected to supply about this amount in 1965. Thus the United States is projected to supply about 5,000 tons of raw cotton to Israel in 1965.

While it appears that Israel will be an importer of raw cotton in 1975, rather than an exporter as projected in the Falk report, an approximate level of imports is difficult to predict. Israel's need for raw cotton by 1975 will hinge directly on the success attained by the cotton industry in exporting high-quality finished products.

The prospects for creating a truly competitive garment export industry in Israel, so far from the fast-changing markets of Western Europe and the United States, are conjectural. The chances of Israel's relatively high-priced labor producing wares which would be competitive in the low-priced markets of Central America, Africa, and Asia are also questionable. If profitable markets are not found for cotton, the present rate of subsidization is unlikely to continue. Thus textile and cotton production would decrease.

The United States' share of the Israeli cotton market is unlikely to increase, on a percentage basis, from 1965 to 1975.

Oilseeds

Israel produces but a small part of her oilseed needs. Local production is small, due to the intensive type of farming, which is not well suited for oilseed crops. Cottonseed outranks sunflowerseed or peanuts as the major domestic oilseed crop. The locally grown peanuts are of high quality, and it is more profitable to use them for eating or for export than for oil production.

The government is the sole agent for imports of oilseeds and oils. The imports, almost exclusively soybeans, are shipped in bulk to plants where oil is extracted. The oil industry is operating with a large overcapacity. In 1963 the oil industry's annual crushing capacity was about 350,000 tons; actual oilseed crushings amounted to 217,600 tons.

The oilcake remaining after the extraction of the oil (4.3 tons of oilcake for every ton of oil obtained from soybeans) is an important source of revenue for the oil industries. But the local industries, mainly poultry and dairy, are now fully supplied with oilcake. Unless sufficient outlets can be found for the oilcake, it would be difficult to increase the production of the oil industry without a heavy subsidy.

Falk report projections: The Falk report makes two sets of projections for oilseeds. The low projection is the quantity of oilseeds which must be refined to supply domestic demand for edible oils. The high projection is the quantity of oilseeds needed to operate existing processing capacity at full capacity.

The Falk report projects raw cotton production at 22,800 tons in 1965. As about 1.75 tons of cottonseed are obtained per ton of fiber in Israel, cottonseed production in 1965 is projected at 39,000 tons.

The upper projection for total demand in 1965 is the crushing capacity. The Falk report projected the 1965 crushing capacity at 487,000 tons. In deriving the lower projection for total demand, the per capita consumption of edible oils is projected at 6.7 kilograms of margarine and 9.0 kilograms of oils and their products. Thus, the oil industry will have to refine 37,200 tons of oil for domestic consumption in 1965. This would require 232,000 tons of oilseeds at 16 percent extraction. Subtracting domestic supplies from total demand, the 1965 import levels of oilseeds are projected from a high of 448,000 tons to a low of 193,000 tons.

Cottonseed is projected to remain the only significant domestic oilseed through 1975. Cotton fiber is projected at 33,000 tons in 1975, and using a ratio of 1.75, cottonseed production is projected at 58,000 tons.

The crushing capacity in 1975 is projected to remain at the level projected for 1965--487,000 tons. For 1975, the projected per capita consumption is 6.1 kilograms of margarine, and 8.5 kilograms of other edible oils. Thus total consumption will approach 45,600 tons of refined oil. Approximately 286,000 tons of oilseeds will be required to meet this demand. The import demand for oilseeds in 1975 is therefore projected to be between 228,000 tons and 429,000 tons.

Revised projections and implications: The Falk report projected the 1965 cottonseed production at 39,000 tons. But cotton production has not increased at the rate anticipated, and cottonseed production has to be adjusted downward accordingly, to about 25,000 tons. The level of oilseed crushing in Israel will depend largely on the quantity of oilcake which the livestock and poultry industries can consume. It is projected that the consumption of oilcake by the livestock and poultry industries in 1965 will require the crushing of approximately 275,000 tons of oilseeds. Thus the revised projection for 1965 is that 250,000 tons of oilseeds will be imported.

The 1975 projection of 33,000 tons of cotton fiber is in all probability too high. A level of 23,000 is more plausible. This would mean a yield of approximately 40,000 tons of cottonseed. A demand in excess of that required to supply the demand for edible oils will depend to a large extent on the development of the market for oilcake. The Falk report projects the 1975 demand for oilseeds to be between 228,000 and 429,000 tons. Based on the projected expansion of the livestock industry, oilseed crushings in 1975 will be near the middle of the Falk report projections--325,000 tons. The import projection for 1975 is, therefore, 285,000 tons.

Oilseed crushings consist primarily of imported soybeans (table 21) because soybeans have proven to be the most economical raw material for Israel's combined fat- and protein-feed supply. Greater soybean imports to produce protein-rich oilcake for the local poultry and livestock industry have correspondingly increased oil production. Israel is both an importer and an exporter of vegetable oils. In 1964, Israel exported 26,956 tons of vegetable oil while importing 10,440 tons.

Table 21.--Israel: Amount of oilseeds crushed for production of oils and oilcake, 1956-62 1/

Year	Soybeans	Cottonseed	Peanuts	Sunflower- seed	Copra	Total
: - - - - - 1,000 metric tons - - - - -						
1956...:	55.3	3.2	4.7	.4	7.8	71.4
1957...:	80.3	4.9	2.6	1.0	12.7	101.5
1958...:	113.2	7.6	2.6	1.6	9.5	134.5
1959...:	137.0	10.3	2.2	2.8	4.2	156.5
1960...:	160.6	13.0	4.0	5.6	4.7	187.9
1961...:	181.6	17.1	2.5	9.1	5.6	215.9
1962...:	195.5	19.7	1.6	.8	5.9	223.5
:						

1/ Year ending September 30.

Source: Central Bureau of Statistics, Israel.

In 1965, imports of oilseeds other than soybeans are projected not to exceed 5,000 tons. So, imports of soybeans are expected to approach 245,000 tons in 1965. The United States has been Israel's major source of supply for soybeans, and is expected to supply Israel with about 90 percent of her soybean needs in 1965. Thus, U.S. soybean exports to Israel in 1965 are projected at 220,000 tons (table 22).

Oilseed imports will be primarily soybeans through 1975, and the United States is expected to retain approximately 85 percent of this market. The United States is projected to find a market for 240,000 tons of soybeans in Israel in 1975.

The large market for U.S. soybeans in Israel is due to some extent to promotion under the U.S. market development program. In 1959, the American Soybean Council, under the market development program, established an office in Israel to develop an extensive local market for soybean products, and to turn Israel into a study center for Asian and African countries in the use of soybeans.

Table 22.--Israel: Production and imports of oilseeds, 1956-64, and projections for 1965 and 1975

Year	Years ending September 30					Calendar years	
	Production		Imports			U. S. exports to Israel	
	Cottonseed	Peanuts	Sunflower	Soybeans	Copra	Soybeans	
:----- 1,000 metric tons -----:							
1956...	4.0	19.2	0.5	44.9	10.7	46.2	
1957...	5.2	14.2	1.0	73.9	14.8	78.9	
1958...	6.7	17.9	2.8	90.2	9.0	96.0	
1959...	8.1	12.7	1.5	155.5	2.6	179.4	
1960...	12.2	15.3	2.4	205.0	4.8	169.9	
1961...	16.9	17.0	2.6	167.1	9.0	162.6	
1962...	23.4	14.5	4.3	221.2	3.8	121.0	
1963...	25.7	12.4	1.0	187.6	3.8	187.9	
1964...	22.1	13.0	1.8	245.2	6.2	1/	
1965...	2/ 39.0 : 5/(25.0)	3/ --	3/ --	4/193.0-448.0 : 6/(245.0)	3/ 3/	-- 220.0	
1975...	2/ 58.0 : 5/(40.0)	3/ --	3/ --	4/228.0-429.0 : 6/(280.0)	3/ 3/	-- 240.0	

1/ Not available.

2/ Projection in Falk report.

3/ Not projected.

4/ Total imports. The Falk report makes a high and a low projection.

5/ Revised projection.

6/ Selected level.

Sources: Central Bureau of Statistics, Israel; Falk report; and U.S. Bureau of the Census.

Tobacco

Tobacco acreage in Israel is devoted almost entirely to oriental types. The quality of oriental tobacco depends, among other things, on the type of soil in which it is grown and on a dry summer period during which the crop is not irrigated. These two requirements are best met in the hill districts.

Tobacco growing, predominately an Arab occupation, is encouraged in all hill areas where water is lacking and water costs are prohibitive. The prices paid for domestically grown tobacco are determined by the Treasury and the Ministry of Agriculture. Thus the profitability of the crop is largely dependent on Government policy. Tobacco quality and tobacco yields are not high in Israel. But, the full utilization of the land suitable for tobacco growing appears to be in the national interest, both insofar as it is a means of sustenance for the farmer, and because at present the land cannot be put to a better use.

Cigarette smokers are practically the sole consumers of tobacco in Israel. As Israel does not produce high-quality tobacco, high-quality cigarettes require a larger proportion of imported tobacco, and the proportion of imported tobacco in a given cigarette is, in fact, the measure of its quality.

Virginia-type tobacco, being of U.S. or Rhodesian origin, requires payments of hard currency. This is not the case with imports of oriental tobacco; Turkey and the Balkan states from which oriental tobacco is imported have required that their tobacco exports to Israel serve as part payment for Israel's exports to them. Thus, the reduction of the trade deficit, always foremost among the Government's aims, induced the Treasury to impose a relatively high excise on Virginia-type cigarettes. Virginia cigarettes constituted approximately 30 percent of the cigarettes marketed in 1952. They constituted about 4 percent in 1963. However, there has been some increase in demand for Virginia tobacco in recent years. This is probably because of increases in disposable income.

Falk report projections: Per capita consumption of cigarettes in Israel is comparatively low. It was estimated at 1,200 in 1960, compared with 3,000 in the United States, and over 2,000 in the United Kingdom and the Netherlands. Under the assumption that annual per capita cigarette consumption will continue at the level of 1,200 through 1965, total demand is projected at 3,000 tons.

The Falk report projected that, in 1965, 4,450 hectares would be planted to tobacco and would yield 2,400 tons. Allowing for wastage of around 12 percent, a net yield of 2,100 tons results.

With 1965 demand projected at 3,000 tons and supply at 2,100 tons, import needs are placed at 900 tons. The Falk report projects the composition of these imports at 300 tons of Virginia tobacco and 600 tons of oriental tobacco.

Domestic production of tobacco is not expected to increase by 1975, because of the relatively low returns inherent in labor-intensive tobacco farming. It is projected that 3,900 hectares will be planted to tobacco in 1975 and that yield will be 10 percent higher than in 1965, owing to technological improvements. The 1975 supply will thus amount to 2,360 tons gross, or 2,000 tons net.

The per capita cigarette consumption by 1975 is assumed to remain at 1,200 cigarettes as in 1965. Thus the difference between the 1975 projection and that of 1965 reflects changes in projected population. Demand by 1975 is projected at 4,000 tons with the following composition: Local oriental tobacco, 2,00 tons; imported oriental tobacco, 1,350 tons; and imported Virginia tobacco, 650 tons.

Revised projections and implications: Import needs of oriental tobacco are likely to be much higher than 600 tons in 1965. In 1963, nearly all the tobacco nurseries succumbed to the blue mold infection and as a result only 110 tons of tobacco were produced instead of the anticipated 2,000 tons.

The Government has been very active in providing favorable conditions to encourage growers to carry on with normal plantings. The payment of a subsidy to growers whose normal plantings were affected by the 1963 infection, the increase in price paid for the 1962 tobacco, and the guarantee that tobacco prices for the 1963 and 1964 crop will be adequate has helped offset setbacks suffered by growers.

The Government efforts were rewarded as 2,000 hectares were planted in 1964 and are expected to yield about 1,250 tons. This is a sharp increase over 1963 but it is well below normal plantings.

Assuming the blue mold infection is arrested by 1965, and that the Government policy sustains producer interest in tobacco culture, planting may approach 3,500 hectares. A gross production of 1,900 tons would yield 1,700 tons net. Thus the gap between the 1965 projected domestic production and domestic demand is 1,300 tons. This revised import need is projected to be filled by 1,000 tons of imported oriental tobacco and 300 tons of imported Virginia tobacco.

The United States has been supplying Israel with nearly all of her Virginia tobacco needs in the past and is expected to supply all her needs in 1965 (table 23).

As shown in the Falk report, import needs by 1975 will be about 2,000 tons: 650 tons of Virginia tobacco and 1,350 tons of oriental tobacco. The United States is expected to continue as the major source of Virginia tobacco, and is projected to supply 600 tons in 1975.

No projections are made for manufactured cigarette imports, but indications are that Israel will become an increasingly important market for American-made cigarettes. In 1961, Israel imported 45 tons of cigarettes, of which 38 tons came from the United States. In 1963, total cigarette imports amounted to 119 tons, with 105 tons originating from the United States. U.S. cigarette exports to Israel increased from \$116,000 in 1957, to \$495,000 in 1961, to \$952,000 in 1963.

Rice

Israel imports all her rice. Rice was grown on an experimental basis from 1957 to 1960 but rice culture was found to be uneconomical.

The government controlled the price of rice and rationed the quantity issued until 1959. In 1959, the first year in which no rations at low official prices were distributed, the free-market price declined in relation to other food prices and per capita consumption increased (table 24). But in 1960, though prices declined somewhat more, per capita consumption showed only an insignificant increase. The family surveys indicate that the per capita consumption of rice does not increase with rising income. Increases in total consumption will therefore be dependent upon the rate of population increase.

Falk report projections: The per capita consumption of rice in 1960 was 5.6 kilograms. It is projected that this rate will remain unchanged through 1965, resulting in an import need of 14,700 tons.

By 1975, the per capita consumption is projected to decline to 5.1 kilograms. Applying this rate to the projected 1975 population figure results in a demand of 18,000 tons.

Table 23.--Israel: Production and imports of unmanufactured tobacco, 1956-1964, and projections for 1965 and 1975

Year	Years ending Sept. 30:		Calendar years
	Production	Imports	U.S. exports to Israel
<u>Metric tons</u>			
1956.....	1,375	670	181
1957.....	1,760	752	209
1958.....	1,475	784	129
1959.....	2,400	930	125
1960.....	1,740	1,074	208
1961.....	2,320	1,100	127
1962.....	2,235	1,256	227
1963.....	110	1,501	242
1964.....	1,250	<u>1/1,007</u>	<u>2/</u>
1965.....	<u>3/ 2,100</u>	<u>3/ 900</u>	--
	<u>4/(1,700)</u>	<u>4/(1,300)</u>	300
1975.....	<u>3/ 2,000</u>	<u>3/2,000</u>	600

1/ 11-month period.

2/ Not available.

3/ Projection contained in Falk report.

4/ Revised projection.

Sources: Central Bureau of Statistics, Israel; Falk report; and U.S. Bureau of the Census.

Implications: In recent years the United States has accounted for approximately half of Israel's rice imports. Because of exchange problems, Israel's desire to trade with Asia, and other considerations, Asian rice is expected to become more important in the Israeli market.

It is expected that the United States will supply Israel with about 50 percent of her rice needs in 1965 but only about 25 percent by 1975. On this basis the United States can expect to export about 7,500 tons of rice to Israel in 1965 and about 4,500 tons by 1975.

Table 24.--Israel: Production and imports of rice,
1956-64, and projections for 1965 and 1975

Year	Years during Sept. 30		Calendar years
	Production	Imports	U.S. exports to Israel
: - - - - Metric tons - - - - :			
1956....	0	12,205	563
1957....	250	11,747	300
1958....	2,100	6,822	49
1959....	1,100	11,542	4,526
1960....	600	13,613	7,169
1961....	0	13,900	6,331
1962....	0	15,139	5,366
1963....	0	15,310	7,977
1964....	0	14,978	<u>1/</u>
1965....	0	14,700	7,500
1975....	0	18,000	4,500

1/ Not available.

Source: Central Bureau of Statistics, Israel;
Falk report; and U.S. Bureau of the Census.

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